Gleanings in Bee Culture

Established 1873

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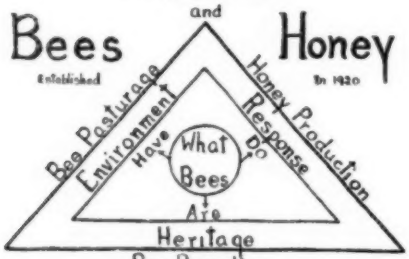

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The Monthly Honey Market

U. S. GOVERNMENT REPORT

Information from Producing Areas (last half of January).

California Points: Southern California—The weather has been unsettled, but considerable rain has been reported over most of the area, and heavy rainfall in several sections. Temperatures have been above normal and plants have made a good growth. Many annuals are already in flower. Bees have been active in the orchard areas especially where cover crops, such as mustard, are available. Eucalyptus has also been in bloom; and willows near the coast. Brood-rearing has been active and many colonies have one to five frames of brood, or more than usual at this season of the year. Bees in the hills, where manzanita and Christmas berry are in bloom, have just started brood-rearing. The continued rains have increased the prospects for a favorable honey season in 1941. Snowfall in the Sierras is very much heavier than year ago. The interior desert areas have deeper moisture than normal, indicating good prospects for later nectar from desert plants. Demand for honey has been moderate to light, with little change in prices. Beekeepers have been offering lightly. Buyers are showing less interest than they were in the fall, though very little white honey is still available. Sales by beekeepers reported in case lots or more at Southern California delivery points, per lb.—Orange, Extra White, very few sales 5⅛-5¼c, White 4½-4¾c; Sage, Extra White to Water White 5¼-5½c, White 4½-5c; Sage-Buckwheat, Extra Light Amber $5-25-5.30, few $5.50, per case of 120 lbs.. Light Amber $4.70-5.00 per case. Beeswax has continued in good demand, with offerings limited. Dealers have been paying 21-23c per lb. for good yellow wax, with darker wax selling at 19-20c per lb. delivered Los Angeles.

Central California—Colonies generally have good clusters of bees and many have 1 to 4 combs of brood and young bees hatching. Following heavy rainfall, the latter portion of the period was fair, permitting bees to gather nectar from early sources including eucalyptus, manzanita, mustard and early-blooming fruit trees. Pepper grass is starting to bloom. The long rainy period, extending from the middle of December, insures ample soil moisture and the outlook is for another large crop of honey in 1941. Rainfall to date is fully one-third more than that of a year ago at the same date, and in some sections twice as much. Plants are unusually well advanced and all annuals are very abundant. The stocks of Light Amber honey in beekeepers' hands are being offered freely, but supplies of Orange and Sage honeys are relatively light and are firmly held. The market has been moderately active, with dealers buying to add to their depleted stocks but prices show little change. Sales by beekeepers in ton lots or more, per lb., delivered Bay Cities—Light Amber Cotton-Alfalfa 3-3¼c; Light Amber Mixed Flowers 3c. Delivered Interior Valley Points—Light Amber Cotton-Spikeweed and Mixed Flowers mostly 3c. Sales at country points—Light Amber to Extra Light Amber Cotton-Alfalfa $3.85-4.00 per case of 120 pounds; Light Amber to Extra Light Amber Alfalfa few sales $3.85-3.90 per case. Sales delivered Los Angeles—Light Amber to Extra Light Amber Cotton Alfalfa, $4.00-4.25 per case; Light Amber to Extra Light Amber Spikeweed Blue Curl $4.00-4.10 per case.

Northern California—The weather was generally fair at the close, following a long period of rainy weather that extended from mid-December. Both annuals and perennials have been stimulated in growth. Filaree, chickweed, pussywillow, and early fruits are in blossom, and brood-rearing is getting well started. Clusters are large and most hives have adequate pollen reserves. Some sections report over 20 inches of rain so far, or more than normal for the entire season.

SUMMARY—Temperatures have averaged above normal, and in some cases have been exceptionally high, permitting bees to fly even in some of the Mountain States and in the lower portions of the White Clover Belt. In general, bees wintered outdoors are still in good condition and those in cellars are giving only occasional indications of distress. Beekeepers in scattered areas, however, are showing increasing concern over the apparent shortage of stores in some of the colonies, and early feeding will often be necessary. Precipitation has been widespread and heavier than usual over much of the country. Substantial snowfall reported over the Northeast, the Ohio Valley, the Central Great Plains, and some of the Mountain area. The mild winter and abundant moisture have placed nectar-bearing plants in unusually good conditions, and the beekeepers almost everywhere are now looking forward to a prospective heavy nectar flow in 1941. Many are

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ordering package bees, and equipment is being prepared in readiness for anticipated needs. Brood-rearing is well under way on the West Coast and in the South, and some beekeepers are apprehensive of the amount of possible chilled brood if February should be too cold.

Reports indicate that inquiries for large lots of honey are scattered but for the country as a whole are probably above average for this season of the year and local demand has continued better than is usual for January. Stocks of white honeys are much lighter than normal, and only in the Mountain States and in California do stocks of dark honeys appear excessive. Already reports are being received from commercial beekeepers who are turning down orders for lack of honey with which to fill them. Many commercial beekeepers are holding firm in the expectation that prices will strengthen slightly as the season progresses. Though there is a widespread feeling of optimism among beekeepers, scattered sections report a weakness to the market, with price-cutting often still serious, especially for small containers. Price changes have been slight.

It was at first reported that the exclusion of honey from Canada under the War Exchange Conservation Act of December 2, 1940, would prevent the entry into Canada even of orders placed before that date. It has since been learned that a general ruling exempts goods ordered for shipment to Canada on or before December 2, 1940, so long as they enter Canada before February 28, 1941.

Monthly Report of Honey Producers

Early in February we sent the following questions to honey producers: 1. Do you expect the remainder of the 1940 honey crop to be cleaned up before any of the 1941 crop is ready for market? If any will be held over, what per cent of the crop do you think it will be? 2. At what price has honey been sold or contracted for, if any, in large lots, (carload or less) in your locality during the past month for (a) extracted honey, per pound? (b) comb honey, fancy and No. 1, per case? 3. What are prices when sold to grocers in case lots of (a) extracted honey in 5-lb. pails, or other retail packages in terms of 5-lb. pails? (b) comb honey, fancy and No. 1, per case? 4. What is the retail price to consumers in your locality of (a) extracted honey in 5-lb. pails, or other retail packages in terms of 5-lb. pails? (b) Comb honey, fancy and No. 1, per section? 5. How is honey now moving on the market in your locality? Give answer in one word, as slow, fair or rapid. 6. What is the present condition of the honey plants for next season in your locality as compared with the average? Give answer in per cent. 7. What is the present condition of the colonies, as compared with normal, considering the number and age of the bees and the supply of stores? Give answer in per cent. The answers received are tabulated as follows:

Date			1.	2.		3.		4. To Consumers.		5.	6.	7.
Feb.	State.	Name.	Pct. hold-over.	Large lots. Ex.	Comb.	To Grocers. Ex.	Comb.	Ex.	Comb.	Move-ment.	Cond. honey plants.	Cond. of colo.
6	S-Ala.	(J. C. Dickman)				.35		.40		Slow	100	80
6	B. C.	(A. W. Finlay)		.10½		.70		.90		Fair	100	100
6	S-Calif.	(L. L. Andrews)	0						.20	Fair	100	100
5	S-Calif.	(Geo. Larinan)		.04¾				.45		Fair	100	100
8	C-Calif.	(Davis Bros.)	10	.04				.40	.20	Fair	100	100
11	SE-Colo.	(Otis E. Adcock)	50	.04	3.00	.37	3.00	.45	.17	Slow	100	100
12	E-Conn.	(Allen Latham)	0			.75	5.00	1.00	.27	Fair	100	125
12	S-Fla.	(C. C. Cook)		.04		.35		.50		Slow	100	100
12	C-Fla.	(Harry Hewitt)	0			.50		.65		Rapid	100	100
7	SE-Ga.	(J. J. Wilder)	0	.05½		.40		.50		Good	100	100
7	NC-Ills.	(A. L. Kildow)	20	.04½	2.25	.40	2.50	.50	.13	Slow	90	95
4	S-Ills.	(Carl E. Killion)	10	.07		.45	3.40	.65	.19	Fair	100	100
5	NC-Ind.	(T. C. Johnson)	10			.40	3.00	.50	.15	Slow	75	
10	NW-Ind.	(E. S. Miller)	5			.45	3.00	.60	.18	Fair	90	100
6	W-Iowa	(E. G. Brown)	0	.05½				.44	.15	Rapid	110	100
5	N-Maine	(O. B. Griffin)	0				4.75		.27	Fair	100	100
5	C-Md.	(S. G. Crocker)	0			.60	3.60	.75	.20	Slow	100	90
11	N-Mich.	(Ira D. Bartlett)	0			.36	3.00	.45	.17	Fair	125	75
4	E-Mich.	(L. S. Griggs)	0	.05¼		.35		.50	.19	Fair	100	100
7	S-Mich.	(Floyd Markham)	0	.05	3.00	.50	3.50	.65	.20	Fair	100	100
5	C-Mich.	(E. D. Townsend)	0	.06						Slow		
11	E-Minn.	(Floyd W. Ray)	5	.04¾		.35		.39		Fair	100	100
10	W-Minn.	(B. L. Morehouse)	0			.45		.55		Fair	90	80
14	W-N. M.	(C. A. Baltzley)		.05½		.45	3.60	.60	.23	Slow	100	85
4	W-N. Y.	(Adams & Myers)	0			.45	3.30	.65	.20	Good	100	100
10	NW-N. Y.	(Geo. B. Howe)	0	.06	3.60	.50		.65	.20	Fair	100	100
5	C-N. Y.	(F. W. Lesser)	0	.06½						Fair	100	100
5	NW-N. C.	(C. S. Baumgarner)				.75		.85	.25	Slow	100	90
6	SE-N. C.	(W. J. Martin)	0	.05¾		.62		.80	.20	Fair	100	100
4	C-Ohio	(R. D. Hiatt)	0	.06½		.51		.65	.20	Fair	100	100
10	NC-Okla.	(C. F. Stiles)				.45	3.50	.65	.19	Fair	100	90
6	SE-Penn.	(D. C. Gilham)	25			.70	4.25	1.00	.25	Fair	90	90
6	W-S. C.	(E. S. Prevost)	0							Fair	99	80
6	NE-S. D.	(L. A. Syverud)	0			.33	2.40	.39	.13	Fair	100	90
7	SE-S. D.	(J. F. Norgren)	0	.04½		.37		.45	.12	Fair	95	95
8	C-Tenn.	(J. M. Buchanan)	0					.75		Slow	100	100
8	E-Tenn.	(W. L. Walling)	0			.75		1.00		Slow	90	100
6	C-Texas	(T. A. Bowden)	10			.45		.55		Fair	110	100
6	S-Texas	(H. B. Parks)	0			.45		.55		Fair	100	100
8	N-Utah	(W. H. Hendricks)	0			.38		.48		Fair	100	100
10	W-Vt.	(Phillip Crane)	0		3.70	.65	4.25	.85	.25	Fair	105	100
12	S-Va.	(T. C. Asher)	0			.50	3.60	.59	.20	Fair	100	100
5	N-W. V.	(W. C. Griffith)	0					.45	.18	Slow	100	90
4	SE-Wis.	(N. E. France)	0					.48		Fair	100	

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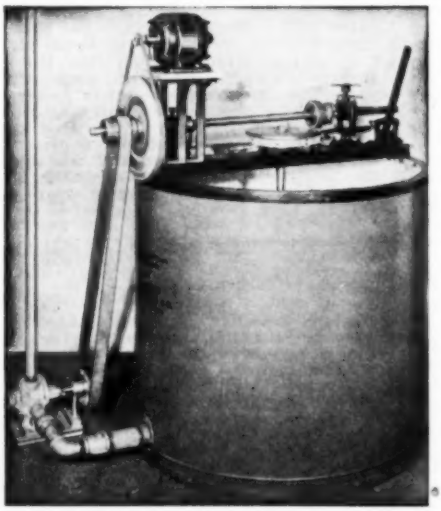

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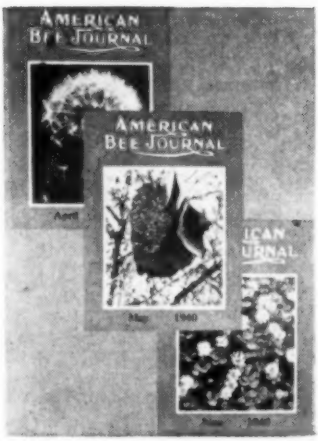

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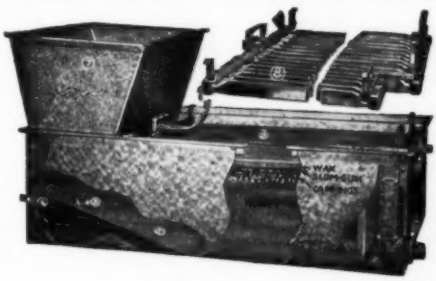

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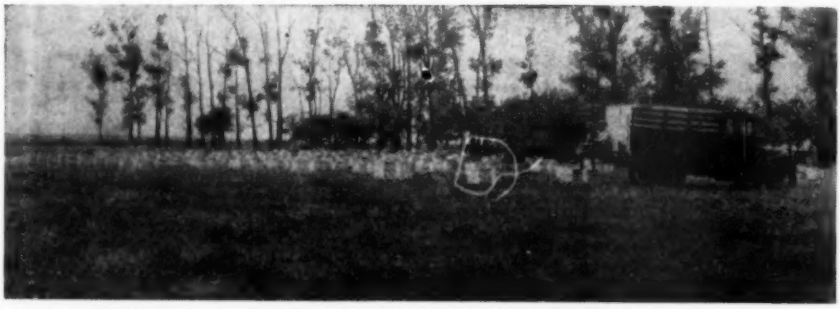

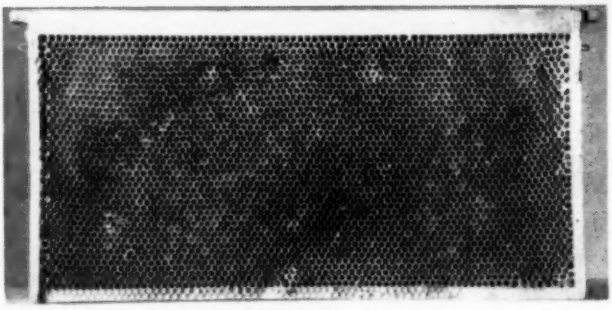

A Perfect Comb after Twenty Years

If you want to see a comb that I know to be old, here is one I am sure has been in use twenty years. I have many from one to twelve years old, but this one is really an old timer. I have used thousands of pounds of Dadant's Crimp-wired Foundation and I find it not only saves me time but the combs I get from it stand up in use and can take the swing of the extractor without damage.

J. D. Beals
Minnesota

For Everlasting Combs Use Dadant's Crimp-Wired Foundation

You, too, will look with pride on your combs many years after they are drawn out. With Dadant's Crimp-wired Foundation you get combs that hold steadily to their job of service as brood combs; as honey combs; through extraction after extraction; through heat or cold; through rough handling and migration, saving you money every year of their life. Long after less sturdy combs have been rendered useless by the severe demands of modern honey production, these everlasting combs will still be doing their bit to reduce the cost of your beekeeping.

Dadant & Sons, Hamilton, Illinois

Makers of Famous Foundations

Crimp-wired—Plain—Surplus

Vol. 69
No. 3

Gleanings
in Bee Culture

March
1941

How Should Colonies Look in January?

By H. J. Rahmlow

The morning of January 31 was bright and clear. For over a week I had waited for the opportunity of examining colonies to see in what condition they are at the beginning of what we know to be the brood-rearing season.

I telephoned Dr. C. L. Farrar of the Central States Bee Laboratory and suggested that we drive out to one or two out-yards and take some pictures. He replied that he would like to go to two yards about fifteen miles out because he hadn't seen them for several months. If the weather turned warm enough about mid-day we decided we could examine colonies to see if brood was present.

We arrived at the first yard about 10:30 A. M. There was about six inches of snow, so we had to leave the car on the highway and walk about a quarter mile—loaded down with movie camera and several types of still cameras. The sun was shining brightly with the temperature in the lower thirties, warm enough so that it was quite pleasant tramping through the snow.

This yard was a package yard and started on April 25, 1940. It was located at the edge of a piece of timber and the hives were surrounded by brush—not the most practical from a commercial producers' standpoint, but desirable in experimental work to minimize drifting of bees which is necessary for accurate results. These colonies were in two hive bodies. The lower winter entrance was open, and in addition there was a one-inch auger hole just below the hand hold in the second body. The colonies were not packed.

Dr. Farrar explained that he likes the small upper entrance for several reasons. The bees seem to like it and use it in preference to the lower entrance during warm spells. It is valuable in case the lower entrance becomes clogged. Should that happen on a warm day when the bees might fly, they are likely to become excited and generate so much heat as to destroy the colony. The lower entrance is used so dead bees can be removed and prevent excessive molding of combs.

This is the way the colonies of Central States Bee Laboratory look in mid-winter. Top entrance is a safeguard in case the lower entrance is clogged. "The bees like it," says Dr. Farrar.

Were the colonies strong? Figure 1 shows the bees just as the inner cover was removed. They covered 9 frames and the cluster extended into

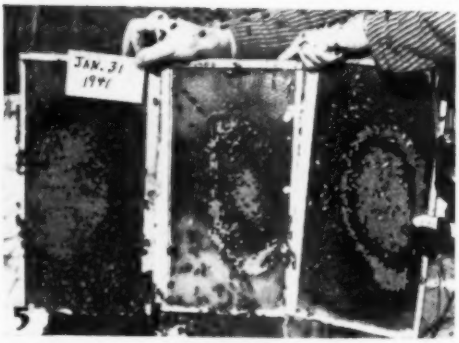

Fig. 1—This shows a colony from a 1940 package on Jan. 31, 1941. Practically all colonies looked as good as this one.

Fig. 2—Honey in top body with some bees. In this hive the brood was in the center body due to considerable honey in the upper.

Fig. 3—Is this colony strong for a January 31 colony? All this colony needs to winter well is plenty of stores.

Fig. 4—Three good frames.

Fig. 5—A close-up of Fig. 4. Notice the pollen in the comb above the brood on the right. This shows how a strong colony will look on Feb. 1 if it has honey and pollen available to the brood nest.

Fig. 6—I asked Dr. Farrar if there were many bees in the middle body. He said, "Let's look and see". This shows there were plenty of bees as well as some brood.

Fig. 7—Bees in both upper and middle hive bodies.

lower hives in the colonies opened. Figure 4 shows what we saw in one of these two-story colonies when we opened it—three frames, each with a patch of brood larger than one's hand. It shows Dr. Farrar holding the frames, and the location of the colony in the brush.

Figure 5 is a close-up of the three frames of brood. Notice the pollen in the cells above the brood in the frame at the right.

Did we find brood in all the colonies we examined in this yard? No. One colony had no brood at all, evidently because it was somewhat small and we could find no pollen available to the cluster, although there was some in several of the outside frames.

Colonies in Three Stories

After taking these pictures and some colored movies, we hurried off to another yard about three miles away which Dr. Farrar said consisted of over-wintered colonies of a year ago. This yard has excellent windbreak and brush protection.

Figure 3 shows one of the colonies when we took off the cover and looked down between the frames; we saw considerable honey, but not many bees. Taking several frames out of the center we found them largely filled with honey, but no brood. We decided to raise the upper body to see what was in the second, and Figure 2 shows the result. On taking out several frames from the middle body we again found three frames with good sized patches of brood. Were there many bees? Figures 6 and 7 show the frames entirely covered with them.

Dr. Farrar remarked that these powerful colonies would no doubt build up so as to have ten pounds of bees by May 1. Of course, that means that they must have sufficient honey and pollen to produce that many bees. There was plenty of honey in the third body, and should they run short of pollen and be unable to get enough in the spring due to unfavorable weather, Dr. Farrar will provide it by feeding them a mixture of 25% pollen and 75% soy bean flour.

Winter Brood-rearing Natural

It must be remembered that these colonies had not been fed any pollen or substitute. However, last fall weather conditions were favorable for both pollen storage and brood-rearing, resulting in the powerful colonies shown in the pictures. Remember that no one had visited these two yards since late last fall. The brood-rearing, therefore, is perfectly natural for strong colonies with available pollen.

Will these colonies be weaker by April? Hardly! It has long been recognized that brood-rearing wears out adult bees, and so the loss of old bees will be larger than if they had not raised brood. But what about the thousands of young bees which will emerge during the coming months? Dr. Farrar has shown in previous experiments that colonies raising brood in mid-winter always have much larger populations in the spring than those which do not raise brood.

It has been argued that bees become old faster and so die sooner if they raise brood in the winter, but let us not forget that they still **get old by spring, regardless of what they have been doing. Old bees do not have the vitality nor brood-rearing ability of young bees.** Consequently, if there are only old bees present in April when brood-rearing begins, they then wear out rapidly and cause what so many beekeepers complain about: "serious spring dwindling".

Colony "Peak" Unnecessary

I know that some beekeepers will say that they would not care to have colonies with ten pounds of bees by May 1, because they would reach their "peak" of production before the honey flow and then go downhill. There need not be a peak in colony development, and many beekeepers manipulate their colonies so that they go through the entire season with maximum production. In fact, Dr. Farrar produces tremendous crops of honey by giving such strong colonies another queen early in May and running them through the season as two-queen colonies.

What is meant by a peak in colony development or behavior? Simply that the colony keeps building up and getting stronger until a certain time, perhaps the middle of June, and then begins to get weaker and produce less honey. There is a decrease in number of worker bees following the peak. There are several reasons for this. Among them are: crowded brood nest, resulting in decreased brood-rearing; development of the swarming impulse which causes the same thing and is due to lack of room and proper manipula-

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tion; a failing queen which may result in supersedure and perhaps the swarming impulse. With a good queen, a colony given plenty of room for brood-rearing (and that means two brood chambers, at least) and properly manipulated should go through the production season with a maximum population. It is such colonies that give us the biggest honey crops.

All Colonies Unpacked

All of the colonies belonging to the Central States Bee Laboratory are being wintered this year without hive protection and look as shown in the pictures. In previous years about half of the colonies were packed or wrapped for experimental purposes. Dr. Farrar said that they saw very little difference between the packed and unpacked colonies. Neither he nor I ever lost any from so-called "severe winter weather". Strong colonies do not freeze!

Wet Packing

Beekeepers recognize that packing must be kept dry. Wet packing has no insulation value, and is a detriment to the colony. The packing material often **becomes wet from the inside**—the moisture given off by bees passes out through cracks in the hive and through the hive walls and soaks the packing.

As to our Madison weather, well, so far this year we have only had a few cold spells, the lowest temperature being 12° F. below, but I have seen it 20 and 30 below and for a week at a time.

Since November 12 on only 12 days did the temperature exceed 40° F. The highest temperature in November was 56°, in December, 45°, and for January, 38° F. according to the United States Weather Bureau.

I have found it profitable to remember that **what is in the hive** is far more important than what is on the outside. Also, we can't have strong colonies in spring from weak colonies in the fall.

Heavy Packing

Just a word in conclusion to the advocates of heavy packing for winter protection. Anyone having an economical system of packing giving good results should of course keep on using it. But when losses are experienced in spite of packing, isn't it time to look elsewhere for the cause? As long as beekeepers believe they can overcome winter losses by putting something on the outside of the hive to make up for the lack of proper conditions on the inside—just so long will there be winter losses, as reported last spring.

Madison, Wisc.

The Passing of Father Jaeger

By E. R. Root

Another of our great personalities and an international figure, the Reverend Francis Jaeger, of St. Bonifacius, Minnesota, passed away on January 27, 1941, at Alexandria, Louisiana, where he had been in the habit of spending his winters.

For sixteen years Father Jaeger taught bee culture at the University of Minnesota. Loved and respected everywhere, he will be greatly missed at our national conventions. He will be remembered as an interesting and forceful speaker. Father Jaeger could draw a crowd anywhere at any time.

He spoke several languages. At the time of the first Great War he served as an interpreter for the American Red Cross in the Balkans. He returned to America, was appointed Major and re-assigned to duty with the Relief Commission. In later years he devoted himself to the work of the Church, where he was a leader.

In his latter years he was in failing health.

The Catholic Church and the bee world at large have lost a great and useful man. Just now this poor old world needs more men of his caliber and spiritual uplift.

Peace to his memory.

Father Jaeger

Make Them Now

By Clarence Tontz

During the winter days beekeepers can make good wages by repairing beekeeping equipment and making some really worthwhile labor-saving devices for themselves. The following beekeeping devices and methods of repair have well withstood the test of practical application.

Most beekeepers have sometime or other used excluders damaged just enough for the queen to get through and so had to go through four or five supers of honey to find her. I have yet to see a better method of repairing the corners of wood-and-wire excluders than that done by Edgar Kontz, a commercial beeman in Iowa. In fact, the used excluder frame when repaired this way is stronger than when it was new. Fig. 1 shows a pattern of a corner brace. It is cut out of a discarded 60-pound tin. Cut it about four inches long. Have it wide enough to cover the corner of the frame as shown in Fig. 2. Nail it on with tacks that do not come out the opposite side. Round off the sharp corners of the tin and pat it down smooth with a hammer.

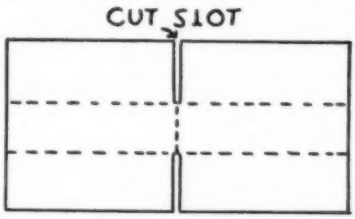

FIG. 1

A useful device for stacking up heavy objects, such as cases of honey,

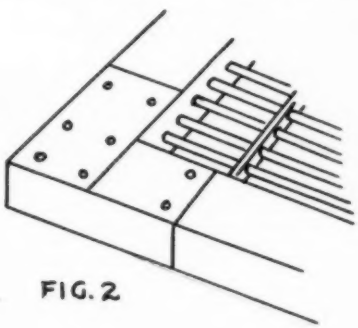
FIG. 2

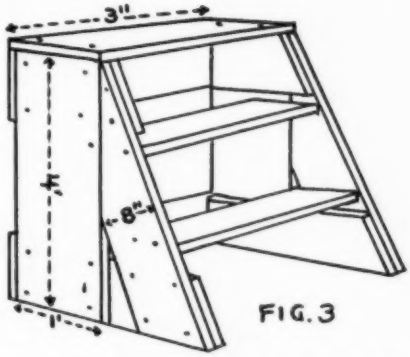

FIG. 3

is a sturdy step-ladder shown in Fig. 3. An average man can pick up a case of two sixty-pound cans of honey and walk up the ladder with full confidence that it will not topple over or collapse. Although all cross braces cannot be shown in the illustration, the ladder has ample braces to make it one solid piece. With this ladder the honey can be stacked six cases high.

Fig. 4 shows a truck that is used to haul supers down to the basement and for other purposes. It is of simple construction and durable. Seven supers of combs can be hauled at one load. So that supers could be hauled down into the basement two boards 4 inches wide for tracks were laid securely over the steps. The tracks were fastened at the top of the steps by strips of tin nailed on them and to the door sill. Near the bottom of the steps a strip of wood nailed on

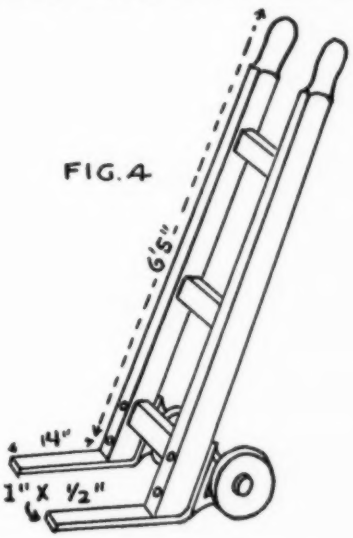

FIG. 4

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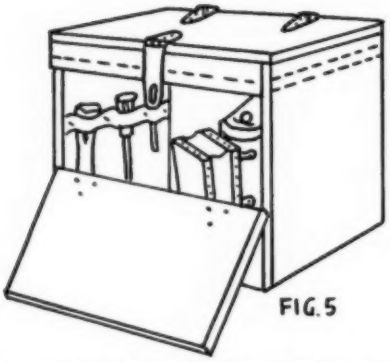


FIG. 5

the underside of the tracks and forced to lap tightly over the side of a concrete step held the tracks in place. The operator walked down the steps between the tracks. We also found this truck useful in hauling supers of honey from the home apiary to the honey house.

The strap iron carriers are bolted onto the frame. A stack of supers are loaded by giving them a slight tilt with one hand and sliding the carriers underneath. Have them right angles to the shafts.

A box for the apiary equipment is almost essential on the bee truck. Fig. 5 shows a simple but efficient tool box built on the rear of the truck.

Stillwater, Oklahoma.

Ice-covered Blooming Apricot Tree

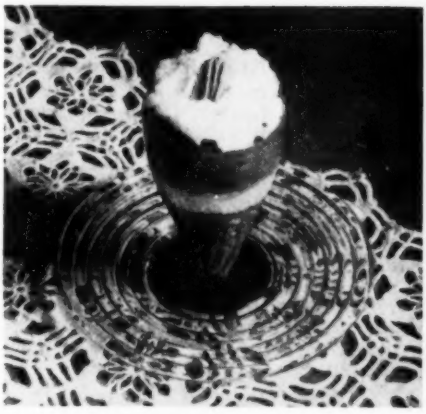
By Clarence J. Tontz

This picture of an early apricot in full bloom, covered with ice and snow, was photographed on February 19, 1938. When the sun began to warm the temperature in the afternoon, a few industrious bees came back to the trees that had yielded nectar a few days previous. But instead of nectar dripping from the blossoms they found only icicles. Perhaps if these bees had lived as long as beekeepers here they would sum it all up with, "Oh, well, that's Oklahoma for you."

Crescent, Okla.

Make Mine Chocolate

By Mrs. Benj. Nielsen



Honey Chocolate Tapioca.

Just ask the man of the house, or the children what flavor pie, ice cream, or tapioca they would like and nine chances to one the answer will be "Make mine chocolate", or "I'll take chocolate". And have you ever run across a tea room or restaurant menu not listing some delectable chocolate dish? The dispenser behind the ever-popular soda fountain in any town in the United States can vouch for the fact that six out of ten sodas, sundaes, or fountain drinks served are chocolate-flavored. Who ever heard of a midnight "snack" or "spread" at college or camp without a box of creamy chocolate fudge! Aside from honey few flavors have had the widespread popularity of chocolate. Blend its rich, smooth, delightfully bitter flavor with the mellow sweetness of honey and no team of foods ever offered a more amazing range of food-delights!

The history of the fondness for chocolate parallels that of honey in interest and variety. Records show that long before Columbus dreamed of a new route to India, cocoa beans were used as food by the natives of the West Indies, South America, and Mexico. Chocolate was a prized drink of the ancient Aztecs. It was made by crushing the cocoa beans, beating the resulting fluid into a thick froth which was then flavored with vanilla and chili peppers—of all things! Montezuma, their great emperor, was said to be very fond of this peculiar drink. (Everyone to his own taste—I'd much prefer mine flavored with honey!) After the conquests of those daring explorers chocolate was introduced into the Mediterranean countries. Ere long it became the fashionable drink of Europe. Its subtle richness appealed to the sophisticated palates of kings and other royalty. Walter Baker is credited with introducing chocolate to America. The first chocolate mill in America, built on the banks of the river Neponset in Dorchester, Massachusetts, became the establishment of Walter Baker and Company in 1780. Today Walter Baker products are famous the world around and in the kitchens of rich and poor alike, good cooks open the tempting package bearing the picture of a winsome lady in quaint costume, and work its contents into myriad tempting chocolate treats.

In changing your favorite chocolate cake and cookie recipes to use honey it is well to keep in mind the absorption quality of chocolate. Batters may appear too thin but thicken amazingly in a short time; so mixes may require as much liquid as the original sugar mix recipe. This fact is well borne out in making the first recipe given with this article.

The first member of the family to sample these delicious brownies exclaimed, "Mom, these taste like fudge!" And so they do. You'll be delighted with and ponder a bit over the crisp crunchy specks in their fudge-like goodness. You'll identify the nut meats at once, of course; the surprise bits are Kellogg's tasty All-Bran cereal. Good for you and good to eat. If this cookie confection seems not as sweet upon baking as you prefer, tax your will power a bit, if you can, and store the squares in an air-tight container for one to three weeks. Then I challenge you to find ary a thing about them not wholly satisfactory. These delectable goodies are grand to have on hand

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for evening lunches when unexpected guests drop in.

Honey All-Bran Fudge Squares

Four squares unsweetened chocolate, ⅓ cup butter, 2 eggs, ¾ cup honey, ½ cup sifted flour, ½ cup Kellogg's All-Bran, ½ cup chopped nuts, and 1 teaspoon vanilla.

Melt chocolate over hot water and add butter. Beat eggs well, add honey gradually, and continue beating. Add melted chocolate and butter. Stir in flour, All-Bran, nuts, and flavoring. Pour into greased pan, making a layer about ⅓ inch thick. Bake in a moderate oven, 375 degrees F., about 20 minutes.

Chocolate Tapioca Cream

Two squares unsweetened chocolate, cut in pieces, 4 cups milk scalded, ½ cup honey, ¼ teaspoon salt, ⅓ cup quick cooking tapioca, 2 egg yolks, 1 teaspoon vanilla, and 2 egg whites.

Add chocolate to milk and heat in double-boiler. When chocolate is melted beat with rotary beater until blended. Add honey and salt. Stir in tapioca gradually. Cook until tapioca is clear, stirring frequently. Pour small amount of tapioca mixture over egg yolks beaten until thick and lemon colored, stirring vigorously. Return to double-boiler and cook until thickened. Remove from heat and add vanilla. Fold in stiffly beaten egg whites. Cool. Pile lightly in sherbet glasses. Chill. Garnish with honey sweetened whipped cream just before serving. Serves eight.

Baked Honey Chocolate Custard

Four cups cold milk, 2 squares unsweetened chocolate, cut in small pieces, ⅓ cup honey, ¼ teaspoon salt, 4 eggs, slightly beaten and 1 teaspoon vanilla, optional.

Place milk in double-boiler, add chocolate, and heat. When chocolate is melted, beat with rotary beater until blended. Combine honey, salt, and slightly beaten eggs. Add chocolate mixture gradually, stirring until honey is dissolved. Add vanilla. Pour into greased custard cups, place them in a pan of hot water and bake in a slow oven, 325 degrees F., 40 minutes or until silver knife inserted in center comes out clean. Chill. Serves eight.

Honey Chocolate Ice Cream

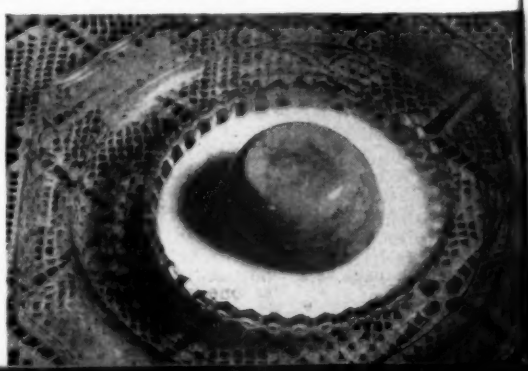
One and ½ squares unsweetened chocolate, grated, 2 cups cold milk, ½ cup honey, 2 tablespoons flour, ⅛ teaspoon salt, 2 eggs, slightly beaten, 1 cup whipping cream, and 2 teaspoons vanilla, optional.

Add chocolate to milk in double-boiler and heat until chocolate is melted. Beat with rotary beater until chocolate is blended. Combine honey, flour, salt, and eggs, mixing well. Pour small amount of hot chocolate over egg mixture, stirring constantly. Return to double-boiler and cook until slightly thickened, stirring constantly. Cool. Add whipped cream and vanilla. Pour into tray of mechanical refrigerator. Freeze to mush. Place mixture in cold bowl and beat with rotary or electric beater until smooth. Continue freezing. If made in an ordinary freezer it is not necessary to whip cream.

Honey Chocolate Chiffon Pie

Two and ¼ cups cold milk, 3 squares unsweetened chocolate, cut in small pieces, 1 cup honey, ½ teaspoon salt, ¼ cup milk, ½ cup cornstarch, 2 tablespoons butter, 3 egg yolks, slightly beaten, 1 teaspoon vanilla, 3 egg whites, and 4 tablespoons honey.

Place milk and chocolate in double-boiler and heat. When chocolate is melted, beat with rotary beater until blended. Add honey and salt. Pour small amount of chocolate mixture over cornstarch, stirring until smooth. Add butter and return to double boiler and stir constantly until thickened. Cook 10 minutes to remove starchy taste, stirring frequently. Pour portion over egg yolks, stirring constantly. Return to double-boiler and cook until thickened. Add vanilla. Cool. Pour into previously baked pie shell. Beat egg whites until stiff, drizzle honey in gradually and continue beating. Pile lightly on filling. Bake in moderate oven, 325 degrees F., until slightly browned. The filling may be poured in a chilled honey graham cracker crust. Omit meringue and serve with honey



Honey Chocolate Custard,

Honey All-Bran Fudge Squares.

sweetened whipped cream. Calls for seconds.

Honey Chocolate Cream Puffs

One-half cup butter, 1 cup boiling water, 1 cup sifted flour, and 3 unbeaten eggs.

Melt the butter in water. Sift the flour; measure. Stir flour into steadily boiling water. Cook, stirring constantly until mixture leaves the sides of the pan in a smooth compact mass. Then beat in eggs, one at a time. Drop from spoon on greased cookie sheet, spacing well apart. Bake in hot oven, 450 degrees F., 20 minutes; reduce heat to moderate, 350 degrees F., and bake 10 minutes longer. Make slit in one side of each puff and fill with

Honey Chocolate Filling

One 7-ounce bar Nestle's Semi-Sweet chocolate, 2 cups scalded milk, ½ cup honey, ⅓ cup sifted flour, ⅛ teaspoon salt, 2 eggs, and 1 teaspoon vanilla.

Melt chocolate over hot water. Add honey to scalded milk. Add scalded milk gradually to the flour and salt, stirring constantly. Cook 15 minutes over rapidly boiling water, stirring constantly until mixture thickens, and afterwards occasionally. Add eggs, slightly beaten, and cook 3 minutes longer. Remove from fire. Add melted chocolate. Cool and add vanilla.

Honey Chocolate Whip

One square unsweetened chocolate, cut in small pieces, 1 cup cold milk, ⅓ cup honey, 2 tablespoons cornstarch, ⅛ teaspoon salt, ¼ cup milk, 2 egg yolks, 1 teaspoon vanilla, 2 egg whites, and ½ cup moist shredded coconut.

Combine chocolate and 1 cup of milk in double-boiler. Heat until chocolate is melted and beat with rotary beater until blended. Add honey. Combine cornstarch and salt, add ¼ cup milk, and mix to smooth paste. Add to chocolate mixture and ccok until thickened, stirring constantly. Cover and cook 10 minutes longer, stirring occasionally. Pour small amount over slightly beaten egg yolks, stirring vigorously. Return to double boiler and cook 2 minutes longer. Add vanilla and cool. Fold in stiffly beaten egg whites, pile lightly in serving dishes and sprinkle with coconut.

Honey Chocolate Caramels

Two squares unsweetened chocolate, cut in small pieces, 1 cup sugar, ¾ cup honey, ¼ teaspoon salt, and 1½ cups cream.

Combine chocolate, sugar, honey, salt, and ½ cup of the cream. Place over low flame and stir constantly until the sugar is dissolved and mixture boils. Cook, stirring constantly until a few drops tested in cold water form a soft ball. Add ½ cup cream and cook to soft ball stage again, stirring constantly. Add remaining ½ cup of cream and cook to firm ball stage, stirring constantly. Pour into a buttered pan. Do not scrape the pan. Let stand until cold. Mark into squares. Remove from pan and snip into squares with sharp scissors. Wrap in waxed paper AT ONCE.

Honey Chocolate Popcorn Balls

One and ½ cups sugar, ½ cup water, ⅔ cup honey, 3 tablespoons butter, 3 squares unsweetened chocolate, melted, 1 teaspoon vanilla, and 4 quarts of freshly popped salted corn.

Combine sugar, water, and ⅓ cup of the honey. Place over a low flame and stir constantly until the sugar is dissolved and the mixture boils, washing down the sides of the pan occasionally with a wet cloth wrapped around the tines of a fork. Cover and boil 4 minutes; uncover and cook without stirring to hard ball stage. Add the remaining ⅓ cup of honey and the butter and continue cooking, stirring constantly, to brittle stage. Remove from fire. Add the chocolate and vanilla, stirring only enough to blend. Pour over warm freshly popped corn, mix well. Form into balls. Here's a tip: Buttering the hands will prevent the corn from sticking to them. Wrap balls in waxed paper AT ONCE.

Aurora, Nebr.

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Susceptibility of Honeybee Larvae to American Foulbrood[1]

By A. W. Woodrow
U. S. Department of Agriculture, Bureau of Entomology and Plant Quarantine

The recent consideration of the resistance of honeybees to American foulbrood has raised the question as to what constitutes so-called "resistance". In experimental work it has been found that some colonies become heavily diseased, much less disease develops in others, and in some it seems difficult to produce or establish active disease. Park, Pellett, and Paddock (4) show that, of 200 colonies inoculated in 1937 and 1938 by the insertion of a rectangle of comb containing American foulbrood scales into a comb of healthy brood, 23 percent apparently did not become diseased. Similar results have been obtained where other methods of inoculation have been used.

The variations in disease development and difficulties in producing disease might suggest that the brood of some colonies has an inborn or physiological resistance to American foulbrood. In the more resistant colonies most of the brood might be resistant, with only a small proportion susceptible. For example, Park (3) states that in nonresistant colonies probably less than 1 percent of the infected brood reaches the pupal stage, whereas in resistant colonies a considerable proportion does not die until that time. He concludes, "Is it not, then, conceivable that some individuals in resistant colonies may withstand the infection with sufficient success to carry them on into the adult stage?"

Brood from Resistant and Nonresistant Colonies Equally Susceptible

Experiments were conducted in 1938 and 1939 at Laramie, Wyo., to determine whether the brood from resistant and nonresistant colonies varies in resistance or is equally susceptible to the disease. The colonies tested included some that failed to develop disease, some that recovered after a small amount of disease had appeared, and some that became heavily diseased or were of highly susceptible stock.

The tests were made by placing young brood from the colonies to be compared in the brood nests of heavily diseased colonies for feeding and development under fairly constant conditions of heavy infection. Brood combs of the diseased colonies containing hundreds of cells of brood that had died of American foulbrood were placed on both sides of each inserted comb. As four frames of young brood were about as many as could be given to a diseased colony at one time without part of the brood being neglected, each test was made on brood of from two to four colonies. In 1939 some of the diseased colonies used for testing the brood were strengthened by the addition of bees before the brood was inserted. In some cases, also, combs from other heavily diseased colonies were added to the diseased colonies and placed adjacent to the inserted combs. The quantity of infectious material in the added combs probably varied, and this may have caused some variations in the disease produced in the inserted brood. After the inserted brood in the diseased colony was sealed, it was caged to prevent the bees from removing diseased brood. Just as the brood began to emerge, each cell was opened and the percentage of diseased brood determined.

The results of the experiments are given in table 1. Since conditions for infection varied in the different tests, as shown by the variation in the infection of the brood from colony 156 from 7.0 percent (test 8, right side of comb) to 63.3 percent (test 9, right side of comb), each test should be considered as comparable only within itself. The differences in the percentages of infection obtained among colonies in the individual tests probably are not significant. The brood from both resistant and nonresistant colonies was susceptible to the heavy inoculation. Since brood from all colonies was affected to about the same degree, there is no indication of greater physiological resistance in the brood from the resistant colonies.

[1]A contribution from the Bureau of Entomology and Plant Quarantine, U. S. Department of Agriculture, in cooperation with the Agricultural Experiment Stations of Arkansas, Iowa, Texas, Wisconsin, and Wyoming.

In fact, there is no evidence that any of the larvae possessed resistance to the disease. That a large proportion of the brood from all colonies escaped death from the disease can scarcely be attributed to resistance, since it varied between tests and also is commonly observed in heavily diseased colonies showing no evidence of resistance. The percentage of diseased brood dying in the pupal stage was about the same in the brood from the nonresistant as in that from the resistant colonies, the proportion apparently depending on factors other than resistance.

Brood Most Susceptible During First Day of Larval Life

Although some of the differences in the percentage of infection observed between tests, between colonies, and between the two sides of a comb may have been due to differences in inoculation, as previously mentioned, they were further explained when brood of various ages from healthy colonies was inoculated. Inoculation was accomplished in one experiment by placing brood of known age, obtained by confining the queen on clean, empty combs for approximately 1-day periods, in heavily diseased colonies, as was done for the comparative-susceptibility tests. In another experiment additional inoculation was given by spraying the brood in each comb with sugar syrup containing 50,000,000 spores of *Bacillus larvae* per cubic centimeter just before it was inserted

Table 1.—Comparative infection of brood from resistant and susceptible colonies when reared in badly diseased colonies.

Test	Brood tested: Colony furnishing brood: Number	Degree of resistance[1]	Brood in combs when placed in badly diseased colony for rearing: Number of cells	Age of brood[2]	Infection produced: Percent of brood in comb infected: Right side	Left side	Both sides	Percent of diseased brood in pupal stage
1	29	R+	757	Just-laid eggs to 3-day eggs	39.9	45.6	42.5	——
	124	S+	1270	Just-laid eggs to 3-day eggs	45.7	38.2	39.8	——
2	29	R+	1094	Just-laid eggs to 3-day eggs	63.5	63.5	63.5	12.9
	156	S+	1057	Just-laid eggs to 3-day eggs	45.5	46.8	46.1	18.6
3	29	R+	577	Just-laid eggs to 2-day eggs	43.6	35.3	36.9	——
	156	S+	1015	Just-laid eggs to 2-day eggs	45.7	44.9	45.3	——
4	29	R+	697	Just-laid eggs to 1-day 19-hr. eggs	42.1	40.8	41.5	——
	156	S+	929	Just-laid eggs to 1-day 19-hr. eggs	44.9	43.2	43.9	——
5	91	R	238	Just laid eggs to 2-day 20-hr. eggs	——	——	28.2	——
	14	S	102	Just-laid eggs to 1-hr. larvae	——	——	26.5	——
	106	S	90	Just-laid eggs to 1-hr. larvae	——	——	23.3	——
6	3	S+	486	2-day eggs to 20-hr. larvae	57.2	76.9	64.6	22.6
	66	R+	846	2-day eggs to 20-hr. larvae	61.8	56.2	57.8	24.5
	123	S	1625	2-day eggs to 20-hr. larvae	56.8	50.9	53.5	13.7
7	14	S	1430	2-day 19-hr. eggs to 1-day 19-hr. larvae	19.6	36.8	25.7	28.3
	142	R+	1505	2-day 19-hr. eggs to 1-day 19-hr. larvae	40.1	20.8	29.1	15.1
	154	S	1643	2-day 19-hr. eggs to 1-day 19-hr. larvae	14.1	12.5	13.8	18.5
	156	S+	932	2-day 19-hr. eggs to 1-day 19-hr. larvae	22.9	37.6	26.1	21.3
8	91	R	1825	Hatching larvae to 2-day larvae	7.5	4.9	5.9	22.2
	106	S	1801	Hatching larvae to 2-day larvae	6.0	6.2	6.1	20.0
	5	R+	764	Hatching larvae to 2-day larvae	14.7	15.1	14.8	24.8
	156	S+	1309	Hatching larvae to 2-day larvae	7.0	10.6	9.2	26.4
9	35	R+	638	2-day 1-hr. eggs to 20-hr. larvae	34.7	46.8	38.2	——
	36	R+	398	2-day 1-hr. eggs to 20-hr. larvae	44.3	40.0	44.0	——
	78	R+	910	2-day 1-hr. eggs to 20-hr. larvae	38.6	52.2	44.1	——
	156	S+	387	2-day 1-hr. eggs to 20-hr. larvae	63.3	43.4	45.0	——
10	114	S+	274	2-day 1-hr. eggs to 22-hr. larvae	43.7	30.9	38.0	19.2
	16	S	1150	2-day 1-hr. eggs to 22-hr. larvae	——	——	29.9	18.9
	156	S+	229	2-day 1-hr. eggs to 22-hr. larvae	34.2	35.9	34.5	17.7

[1]Based on the disease history of the colony previous to these tests.
R+ equals highly resistant colony: Negative, or recovery after inoculation had produced a small amount of diseased brood.
R equals resistant colony: Recovery after inoculation had produced considerable diseased brood.
S equals susceptible colony: No recovery, but not severely affected while under observation.
S+ equals highly susceptible colony: Became heavily diseased, or an uninoculated colony of a strain uniformly highly susceptible.
[2]Age is given to nearest hour. It is based on the time the queen was caged on the comb.

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in the heavily diseased colony for completion of the feeding period. The brood area of each comb received approximately 500,000,000 spores.

The results of these experiments (tables 2 and 3) show that infection is most likely to be produced when larvae are inoculated within approximately 1 day after hatching.[3] The older larvae are less susceptible. Brood inoculated, as was that in the comparative-susceptibility tests, by being placed in heavily diseased colonies for feeding, did not become infected when inoculated 2 days 2 hours after hatching, and but little was infected when inoculated 1 day 5 hours after hatching. With the larvae inoculated by spraying, however, the percentage of infected larvae was increased at all ages and inoculation of somewhat older larvae produced infection, although the younger larvae were the most susceptible. No doubt some time elapses after the larvae are placed in a diseased colony before they are fed and before they ingest spores of *Bacillus larvae* fed to them by the bees of the foster hive. Well-fed young larvae sometimes can live more than 22 hours on the food that surrounds them without further feeding. That the larvae may be neglected is indicated by Lineburg (1), who states, "a large amount of food is placed in the cell of the recently hatched larva and * * * during the second day little or no feeding is done". In the brood sprayed heavily with spores, however, the larvae had an excellent chance of ingesting spores soon after being inoculated. The inoculation received by the sprayed larvae was doubtless many times as heavy as that received by larvae in heavily diseased colonies. Such severe infection conditions are probably never responsible for primary infections under normal apiary conditions.

Nelson and Sturtevant (2) found considerable differences in the rate of growth of larvae. For example, they found that one lot of larvae of equal age (within 2 hours) varied in weight between 5.05 and 28.9 mg. 3 days after hatching. They estimated that from 8 to 10 hours would be required for the sealing of all cells after the first cell was sealed. There were also differences in hatching time; one egg had not yet hatched 75 hours and 45 minutes after the last eggs were laid.

Similar variations in hatching and sealing time were observed by the writer. Numerous eggs had not hatched 77 hours after they were laid, and the period between the completion of sealing of the first and last cells in some combs was much longer than the period between the laying of the first and last eggs. Completion of sealing of brood in different combs, particularly when reared in different colonies, sometimes varied by nearly 1 day. Such variations indicate differences in development of larvae from eggs laid at the same time. Therefore, the age in hours when larvae are susceptible to inoculation may vary considerably. This view is further supported by the fact that infection was produced in 1-day 5-hour larvae in comb 3, colony 35, whereas brood of

[3]It is assumed that the eggs of the honeybee normally hatch 72 hours after deposition, and the age of larvae is based on this assumption. According to various observers hatching occurs 66 to 80 hours after the eggs are laid.

Table 2.—The effect of age of brood on the percentage of brood infected when placed for rearing in a badly diseased colony.

Brood tested				Infection produced	
Colony furnishing brood number	Comb number	Brood in combs when placed in badly diseased colony for rearing: Number of cells	Age of brood[1]	Percent of brood infected	Percent of diseased brood in pupal stage
91	1	1225	3-day larvae to 4-day 1-hr. larvae	0.0	——
	2	1476	1-day 20-hr. larvae to 2-day 23-hr. larvae	0.0	——
29B	1	806	3-day 2-hr. larvae to 4-day 2-hr. larvae	0.0	——
	2	759	2-day 2-hr. larvae to 3-day 2-hr. larvae	0.0	——
	3	891	1-day 5-hr. larvae to 2-day 2-hr. larvae	0.0	——
	4	957	4-hr. larvae to 1-day 5-hr. larvae	8.6	18.3
	5	466	2-day 3-hr. eggs to 4-hr. larvae	57.5	12.7
35	1	951	3-day 2-hr. larvae to 4-day 2-hr. larvae	0.0	——
	2	631	2-day 2-hr. larvae to 3-day 2-hr. larvae	0.0	——
	3	822	1-day 5-hr. larvae to 2-day 2-hr. larvae	0.5	0.0
	4	1020	4-hr. larvae to 1-day 5-hr. larvae	17.1	8.6
	5	942	2-day 3-hr. eggs to 4-hr. larvae	50.1	57.5

[1]Age is given to nearest hour. It is based on the time the queen was caged on the comb.

the same age in comb 3, colony 29B (table 2) escaped infection; similarly, infection was produced in 2-day 5-hour larvae in comb 2, colony 62, but not in brood of the same age in comb 2, colony 142 (table 3).

Period of Susceptibility Corresponds with Period of Mass Feeding

The results of the spray inoculations show that inoculation must occur within the first 3 days 4 hours of larval life to produce infection. It is probable that the five larvae infected in comb 2, colony 62, (table 3) were the youngest in that comb, barely 2 days 5 hours of age when inoculated, thus placing the time at which susceptibility ends early in the third day of larval life. It is perhaps significant that the period of susceptibility corresponds closely with the period of mass feeding of the larvae, which Nelson and Sturtevant (2) found to extend only to sometime in the third day of larval life. If only royal jelly is fed to the larvae during this period, they have little opportunity of obtaining spores of *Bacillus larvae* directly from infectious honey or pollen. This would explain the escape from infection of a large proportion of the brood, even in badly diseased colonies.

The experiments with larvae of known age show that the infection variations in the comparative-susceptibility tests (table 1) were due largely to age differences in the brood. Much of the brood in test 8 was too old to become infected by being placed in the diseased colony, the percentage of infection being low for all colonies. The queen of colony 5 began laying in the inserted comb later than did the other queens in this test; consequently there was a larger proportion of younger larvae in the comb from this colony when exposed to infection and a higher proportion of infected larvae. Similar observed age differences explain some of the variations in disease produced in test 7 between colonies and between two sides of combs. At the time the comparative-susceptibility tests were made the importance of the age of the brood was not understood.

These experiments demonstrate that the brood of colonies resistant to American foulbrood is no more resistant than that of colonies highly susceptible to the disease, and suggest that colony resistance depends on behavior characteristics rather than on physiological factors. The escape of part of the brood from infection appears to be a result of the short period in larval life when inoculation must occur to produce infection and to the type of feedng at that time.

Summary

Brood from resistant and nonresistant colonies was equally susceptible to American foulbrood when reared in badly diseased colonies. This fact suggests that colony resistance depends on behavior factors rather than on physiological resistance in the larvae. There was no evidence of physiological resistance to the disease in honeybee larvae, other than the decrease in susceptibility associated with their age. Brood susceptibility was greatest in the first day of larval life. Susceptibility decreased thereafter to the extent that larvae inoculated more than 2 days 5 hours after hatching did not become infected. The period of susceptibility corresponds closely with the period of mass feeding of the larvae. The failure of some brood to develop disease when reared under infectious conditions appears to be a
(Continued on page 190)

Table 3.—The effect of age of brood on the percentage of brood infected when heavily sprayed with spores of Bacillus larvae and placed for rearing in a badly diseased colony.

Brood tested				Infection produced	
Colony furnishing brood number	Comb number	Brood in combs when sprayed and placed in badly diseased colony for rearing: Number of cells	Age of brood[1]	Percent of brood infected	Percent of diseased brood in pupal stage
62	1	465	3-day 4-hr. larvae to 4-day 5-hr. larvae	0.0	——
	2	439	2-day 5-hr. larvae to 3-day 4-hr. larvae	1.1	60.0
	3	755	1-day 1-hr. larvae to 2-day 5-hr. larvae	12.1	25.5
	4	658	1-day 1-hr. larvae to 2-day 1-hr. larvae	12.5	31.7
	5	447	1-hr. larvae to 1-day 1-hr. larvae	79.9	18.2
142	1	1009	3-day 4-hr. larvae to 4-day 5-hr. larvae	0.0	——
	2	17	2-day 5-hr. larvae to 3-day 4-hr. larvae	0.0	——
	3	727	1-day 1-hr. larvae to 2-day 5-hr. larvae	10.0	24.7
	4	238	4-hr. larvae to 1-day 1-hr. larvae	92.9	14.9
	5	114	2-day 1-hr. eggs to 4-hr. larvae	40.4	10.9
	6	48	2-day 3-hr. eggs to 1-hr. larvae	83.3	7.5

[1]Age is given to nearest hour. It is based on the time the queen was caged on the comb.

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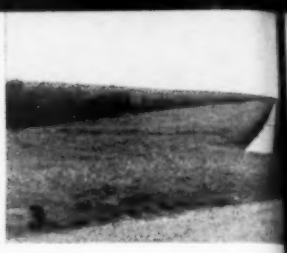

EVERGLADES---Continued from Page 73 of the February Issue

By E. R. Root

The big attraction for tourists from the North is the health-giving climate in Florida, Texas, Arizona, and California. People, old people, especially, who are chilled by winter's cold in the North find the states named to be the panacea—the fountain of eternal youth. Thousands, yes, millions, have had their span of life increased.

The late A. I. Root and founder of this journal was one whose days were numbered. The doctors all told him that if he would go to Florida he could doubtless live twenty years longer. He went to Bradentown, Florida, and proved this prediction.

It was not possible to show all the pictures taken of the Everglades in our last issue. To fully understand and appreciate the possibilities of this great country with its rich productive soil made available now by man-made canals and lateral ditches, the reader will have to prospect a little further. We are presenting additional pictures to show both the productive and unproductive lands in that part of Florida known as the Everglades. Read carefully the fine print by figure number of each

Figs. 1 and 2 show two of the great canals that lead from Lake Okeechobee, one going to the Gulf and the other to the Atlantic Ocean. They may be used as drainage of the excess water or as water supply for irrigation when the land becomes dry. The flow is regulated by a great dyke 30 feet high and by huge water gates. (See page 74, last issue.) The dyke is again shown here in Fig. 4 with the lake over 30 miles square on the left. One of the water gates is shown in Fig. 5, last issue, page 74. Fig. 3 is one of the lateral ditches that feeds the sugar cane on either side. Figs. 5, 6, 7, 9 and 10 and No. 1 next page, show the beautiful macadam highways across the Everglades east and west. They are so straight and perfect that an automobile can travel almost any speed in safety. Fig. 7 shows one of the numerous stopping places at Loxahatchie going from Ft. Myers to West Palm Beach. At this point are orange groves which with the palmettos supply honey for bees. Fig. 8 is a section of good land marked for sale. The productive character is shown by the undergrowth just back of the sign.

Fig. 1 above shows one of the famous highways with good productive land on each side suitable for bees or garden truck. See note to Fig. 6, this page. Fig. 2 shows black mangrove an excellent honey plant some seasons. It is found on beaches and along ditches and rivers all over Florida. The trees are crooked and gnarly. The honey alone is not equal to palmetto or orange but when mixed with these two is not bad. Fig. 3 is one of the great sugar mills of the United States Sugar Corporation, located at Clewiston, where is grown sugar cane as shown in Fig. 4. This when mature is cut, carried to the mill, ground up and squeezed between powerful rollers. The juice is cooked and reduced to crystal raw sugar. It is estimated that the Everglades could produce enough sugar cane alone to supply the world. The production for the present will be limited to this mill. Figs. 5 and 6 represent the two kinds of land found in the Everglades, in fact, of all Florida. Fig. 5 shows poor land suitable only for cattle and hogs. It is too poor to grow a thick growth of trees. Only here and there one is shown and that of the slender half fed type. The lack of trees is usually a sign in Florida of poor land, suitable only for cattle. Figs. 1 and 6 represent good land that will grow almost any tropical. shrub. One can drive in such country for 50 miles without seeing anything but cattle, sheep, and hogs. There are no fences and the livestock often get on the highways. One has to slow down or stop to keep from running into them. If a cow or pig is hurt or killed the driver is held liable and will have to reimburse the owner for such damage. In Fig. 6 we see saw palmetto and here and there pine trees and cabbage palmetto. This land will support orange trees and near Lake Okeechobee garden truck, as shown in Fig. 7, page 74 of our last issue.

The Snakes of Florida

There are all kinds of snakes all over Florida. Many and most of them are venimous but they seldom attack cattle or sheep. Pigs are immune to the snake bite because of the thick mass of fat through which the blood does not circulate. The hogs consider snakes good eating and the snakes know that and keep out of the way. Sheep and cattle are not molested, but a snake will bite a horse, dog, or man. Even man, however, if he keeps a respectable distance will not be molested.

How to Know Good Bee Territory in Florida

As a final statement I wish to make it clear that much of the Everglade land is not good for bees. This statement applies in a larger way for all Florida. It may be set down as a rule that where trees are large of diameter and numerous with a heavy growth of saw palmetto four and six feet high there will be good bee country. Look out for land sharks. Their breed is found all over the United States.

From the Field of Experience

INSTALLING MY FIRST PACKAGE

By C. M. McAuliffe

On the morning of June 3, 1940, I received a phone call. It was from the local Railway Express Agency and it informed me that there was a package of "bees or something" waiting for me there. Well, I rushed down, as the agent solemnly advised me to do, got the bees, not before paying for them, of course, and hastened back home again.

But then the fact came to me that in order to hive these bees properly, I would have to wait 'till evening, if my knowledge of the art of beekeeping did not deceive me. So I waited from about 9:30 'till 5 o'clock watching the bees and dickering with the new hive, before I really got to work.

'Tis true, it is a very messy job that business of drenching the bees with sugar syrup in the cage before hiving them. But I went about it with a firm mind and after almost half of it had dripped onto the ground for the ants to enjoy and the rest had soaked both my hands and shirt, I was ready for the big moment.

I had heard many stories of how gentle bees are after they are fed sugar syrup. Therefore, I did not wear my veil or gloves although I did have them in the house. And so with my hive in place and everything in perfect order I approached the location with the package in my hands. After I removed the inner and outer covers of the hive, I took out five frames, all of which had full sheets of foundation, and laid them on top of the cover. Then I removed, by means of a screw-driver, that square piece of wood that holds in the can of syrup and nervously slipped out the can. The sun was still quite high in the sky and I put the blame on this for the fact that the bees rushed out of the package and swarmed all over me. I was scared stiff. There were untold numbers of the little animals on my shirt which as you remember was wet with syrup. I stood stiff as a pole and figured the problem out thus: If the bees were going to do a job on me they most likely would do it no matter what I did, for as a matter of fact, I was in quite a pretty pickle at the time. Therefore, I decided to go on with the work and not leave things in the mess they were in.

Continuing, I carefully put down the can, pulled the queen cage out, along with about a hundred other bees, and hung this from the top bar of one of the center frames by means of the attached wire. Then I laid the package upright in the emptied portion of the hive; I didn't dare dump part of the bees onto the frames and then lay the package on its side, a better way as some books state, because they seemed to be a little too angry and didn't pay much attention to their recent wetting. With all this completed I put the covers back on, also an entrance reducer, and silently slipped away from the location.

Well, the job was done and I was quite satisfied with my work, having escaped all stings that might have been meant for me. I cleared my shirt of the few bees that were still hanging on enjoying what was left of the syrup, and, in order to give my bees a slight head start, proceeded into the house to brew another "two parts sugar—one part water" into what is popularly known among we beekeepers as sugar syrup.

Having fed this much syrup (about ten pounds), I decided that it was enough for them and, since nectar was coming in quite steadily, allowed the bees to "root for themselves". However, I did inspect my colony every week to see that it wouldn't pass out of existence altogether.

I really did get great pleasure out of those weekly inspections. I don't think I will ever forget the first time I opened the hive a week after installation to remove the empty cage when I saw that four of the frames contained beautiful white combs and another was just chock full of capped brood. There was also another time that I do not think I will readily forget, and that was a time late in August when I opened the hive only to find about five pounds of honey and very little brood. I was really worried. However, as the remaining weeks progressed the hive steadily became heavier until the time of the first frosts when the bees had filled eight frames with honey.

It was around the end of October before I put on the crudely built winter cover to "top-off" a really interesting season. For the next month or so I went around thinking quite well of myself. After all, this business of installing my first package successfully and preparing it for successful wintering was quite an accomplishment in my eyes, and I am sure you would have felt the same way, had you been in my position.

New York City.

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BEES IN THE WALL

By Flora McIntyre

I've just come home from a gruesome piece of business but feeling a glow of success withal.

Yesterday Mrs. M. from across the alley came to me for help. It seems that while she was away for several weeks recently, a swarm of bees had gone into a crack at the corner of her house and were working in and out close to the open porch where she does her washing. She had had the neighborhood handy man stuff the crack with rags soaked with creosote, and now she was troubled by bees inside the house as well as very angry ones outside.

I investigated and decided that the field bees coming home were angry at the obstruction of the entrance and that those inside seeking a way out had found openings through which they entered the house. I removed the creosote rags (a double handful or more of dead bees were tangled in them) and recommended taking off the siding and removing the bees. Mrs. M. feared the old boards would split and have to be replaced by new. So without much hope of success I agreed to try sulphur. Just before dark I made myself a wet cloth gas mask, put a bit of burning burlap in the smoker, and poured in a cupful or less of sulphur. I puffed sulphur smoke into the entrance, stopped it quickly with a rag, and watched smoke ooze out between the boards of the wall. I puffed and puffed for a half hour or more. In the intervals when I was tired of puffing and the smoker was going well, I set it with the nozzle in the crack and let it work automatically. The gas mask was not much good, but fortunately there was a little breeze that carried the fumes to one side so that I did not asphyxiate myself. I did not asphyxiate many bees either for that matter.

This morning Mrs. M. reported a cluster of bees inside the house. She said she had killed them with Flit. "Ha!", said I, "Of course, Flit will kill them. We'll try that." With Flit gun well loaded I sprayed the bees flying in and out, but as that seemed slow work, I kicked the side of the house to make them come out faster. They came, I had to work the spray at top speed to hit all of them. They came faster and faster until finally the queen came out, was sprayed with the Flit and died with the rest.

That is the end of my story. A gruesome tale, but perhaps it will help someone else to solve the difficult problem of bees in the house wall.

P. S. Next morning. Mrs. M. reports that late yesterday evening she sprayed the returning field bees, and that no bees are to be seen about that corner of her house this morning.

Pasadena, Calif.

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HUBAM SWEET CLOVER

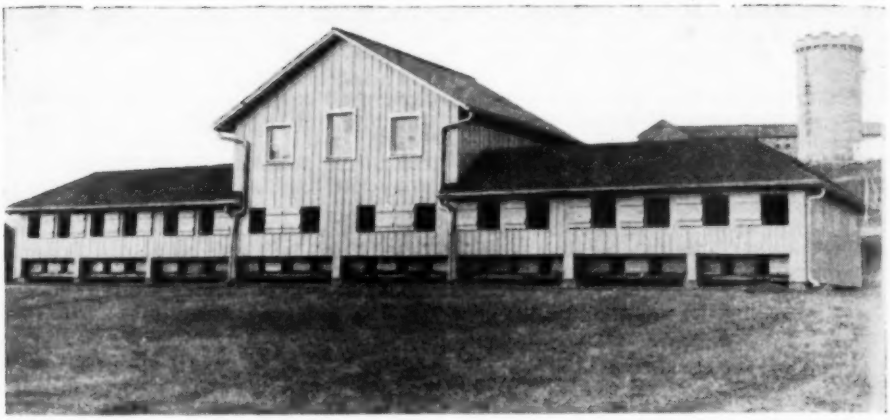
Penn G. Snyder

When I learned one of the members of our Association in Montgomery County, Ohio, had planted two small fields of Hubam the spring of 1940 I felt I would like to keep in touch with the progress and the growth of the clover. When the clover was sewn, alfalfa was planted with it and it was hoped a catch crop would be made from the Hubam.

The clover made a satisfactory growth and by the time the white sweet clover was fading out of the picture with old age the Hubam was just coming into bloom.

From the very first the bees visited the bloom and continued to do so on all fall days that were sufficiently warm for the plants to secrete nectar. When cold nights arrived the bees still continued to work the Hubam as soon as the clear days became warm enough. Ultimately the frosts arrived but did not prevent the bees from swarming over the bloom. Aster had dried up and there was nothing for the bees to work on by November 9, on which day Mr. Paul, who planted the fields, stated he thought all the bees in the county were over those fields of Hubam clover.

Trotwood, Ohio.



The front cover of this issue shows the inside view of this very complete and efficient house apiary.

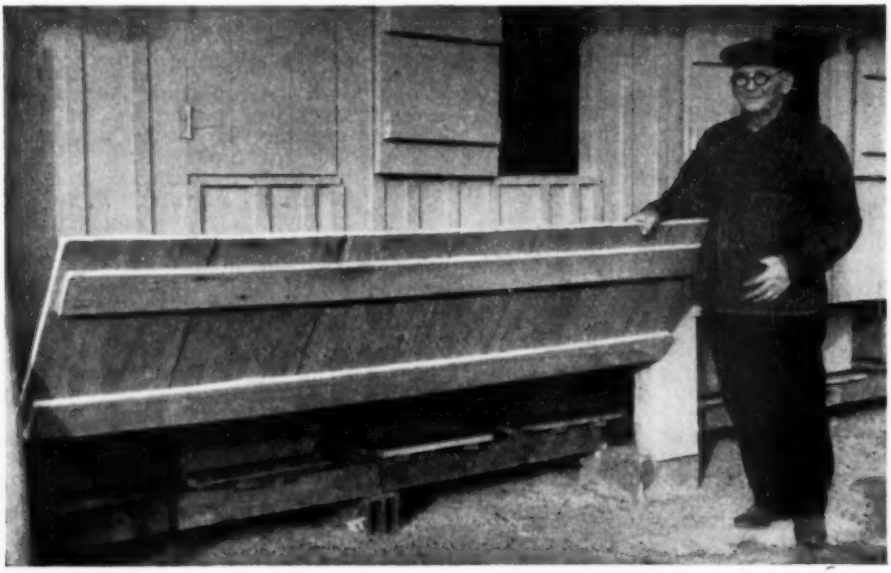
MANAGING BEES IN A HOUSE APIARY

By Bro. Alphonse Veith, O. S. B.

In our house apiary, pictured here and on the cover page, bees are protected against excessive heat in summer and from the inclemency of cold weather and winds. During cold weather, the hanging doors in front of the bees protect them against cold wind, but when warmer weather is approaching, the door may be instantly removed and the hinged doors directly above opened so that the warm rays of the sun may enter. These little doors give plenty of light to work with the bees in spring and summer. Moreover, during the heat of the summer it is much easier to work with the bees in the shadow than in the sun, and what is very important, bees that are in the shadow during great heat will not swarm as readily as those that are exposed to the hot sun. Since the extracting room is near the bees, it takes little time to remove the honey to the proper place.

In our house apiary it is not necessary to pack the hives for winter except on top. We put an ordinary

The hanging doors protect the hives from winter winds, and are removed in summer so the warm air may enter the house apiary.



super on top of each colony with a rack directly over the frames. Over this rack we put a burlap sack with planer shavings about four inches deep. This serves to retain the heat of the bees during winter, and it is not removed until settled, warmer weather is at hand. An ordinary top board is all that covers the hive. This top packing remains perfectly dry until brood-rearing begins, sometimes before the end of the winter.

When brood-rearing is under way a surprising amount of water accumulates on the top board. To dispel it I put wood splints between the top board and the hive. Even at the beginning of May I sometimes find the top board wet. No wonder bee journals advise top ventilation. From this, I judge that top packing with no top ventilation is probably worse than no packing.

The windows on the upper room are windows of a store room for extracting combs and bee supplies for private use and to give light for work.

St. Meinrad, Ind.

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SECOND GLANCES

By C. M. Isaacson

Mr. Root's article (page 73) is a very interesting one, dealing, as it does, with a territory just in the process of development. His description of the bee and cattle country of the Everglades is enticing—it was well that he also included a word of caution as to rushing in too hastily. By the way, his opening statements were rather remarkable (but were explained satisfactorily).

H. H. Root gives convincing evidence in favor of honey for infant feeding (page 76)—especially the pictures and accompanying statistics. He makes a good point in mentioning that as honey is a safe food for babies, it certainly should be likewise for adults (people will often tell you that they "can't eat honey").

We have had the value of advertising "drummed into us" constantly for some time. It is now time to do something about it, and quickly, as Mr. Burleson points out (page 78). He is right, it is our problem; but we do have an agency that can play a major part if we support it properly—the American Honey Institute. Do as much as possible individually—and support the Institute collectively. The sum he mentions is not too much.

A friendly action deserves friendship in return. As Mrs. Nielsen tells (page 81), the Kellogg Company has been boosting honey for many years and deserve appreciation in return.

Editor Root's remarks on insulation (page 85) make it clear that he does favor a fair amount of packing, especially in colder localities. As to winter brood-rearing, its merits or demerits, the final paragraph gives the salient factor; "Time will help us to sift out the truth".

Winter problems in Canada are bound to thoroughly test out any method so Mr. Gooderham's comments are worth reading carefully (page 87). That a **good** cellar equalizes all winters, and also that a system of cellaring is sometimes difficult with spread out apiaries, are both true. He also mentions the necessity of dry packing. It is an important point and will bear repetition.

Mr. Kramer's experiences with Caucasians are similar to some of my own. It seems that some strains will acquire the swarming fever very easily. They are prolific, but I have found them no gentler to handle than some types of Italians.

Just a breath of the war's horror reaches us in H. E. Norman's item (page 91). His mention of the bees' unconcern and the raiding by the wasps serves to remind us that Nature goes her way, through her cycles and struggles, despite the tumult of "man's inhumanity to man".

It is just as well that the article on page 92 is written from Australia—I would rather hate to be within reach after writing those comments anent American women, "war paint", etc. Don't "come over" until the echos have died down, Mr. Shallard.

Mr. Jessup gives a time-saving hint on page 94—dipping the hive parts in oil before assembling. If his succeeding comments include like helps for the busy apiarist, they will be read with interest.

On page 96 we see a prominent victim to the lure of beekeeping. We welcome Messrs. Bergen and McCarthy into the fraternity, and of course the publicity they have given honey upon occasion is not exactly unwelcome.

That early package bees should be restricted to a smaller comb space is a suggestion that may help many buyers to obtain more satisfactory results from packages purchased. We have a lot to learn yet before complete success in their development,

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and every idea may prove of value.

"Upper entrances score again" (page 98). In my locality, where most of the apiarists pack their bees, I know of none who leave a lower entrance at all—they use a top entrance with all lower openings closed. But just a word in regard to the sentence "no one is bold enough to argue that moisture should go into the packing". A beekeeper near me (with a large number of colonies) does just that—he leaves the inner cover hole open, with just a strip of burlap over to hold out the packing. He uses a top entrance, and has good results.

That hive lifter pictured on page 109 should be a useful tool to those with any considerable amount of hive carrying to do. As any beekeeper knows, a two-story hive (as pictured) is a clumsy thing to handle unaided.

There always seems to be a lot of value in Talks to Beekeepers. Every beekeeper would do well to bear in mind the figures on production and consumption given on pages 112-113. They tie in with Mr. Burleson's article; we have no surplus of honey, but must get more people to using more. And, incidentally, I am sure an account of that trip in the car of bees would be of real interest. I hope to see it soon.

Middle River, Minnesota.

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JUST A DAY'S WORK

By John G. Jessup

"Save the surface and you save all", has been a paint-selling slogan. It certainly pays to keep enquipment well painted as then it lasts almost indefinitely. Who knows the best paint to use for bee hives?

We have just been painting some new hive bodies that were dipped in boiled linseed oil and some of the old equipment in need of more paint. In the past either ready mixed outside white paint or white lead and oil has been used. Both of these peel off and weather badly in a few years. This may be due to the moisture within the hive passing through the wood. This would be especially true in winter when the bee cluster gives off moisture in considerable quantity and when there is no ventilation by the bees.

When questioned, a representative of an aluminum paint manufacturing company failed to recommend aluminum paint for wood. He explained it was adapted to use on metal but not on wood, as wood and aluminum expand and contract differently resulting in cracking. However, as our experience with white paint was not satisfactory we have spent the day putting on aluminum. What will it be like five or ten years from now? With all our modern research some one surely ought to give us a paint that will stay on a bee hive and give it protection for twenty years. Repainting every four or five years shouldn't be necessary. Is aluminum paint going to be an improvement? A gallon covers a great deal of surface and we have never seen any that peeled off. One can really be proud of his outfit when the supers have two coats of paint and are full of good combs. They look mighty fine scattered over the floor in stacks of eight with just room enough between for the painter to work. Another thing about aluminum paint,—it will be dry enough to handle the next day.

Getting Queens When Needed

The thing we must do right away is to order queens for use in April or early May. By placing the order months in advance of the delivery date one is pretty sure of getting delivery when they are wanted. This is particularly true if some special strain is wanted like the disease resistant queens that are now being made available. We intend to give these queens a further trial as there is certainly a great difference in the resistance of different strains to AFB. While this stock has not eliminated the disease it is one more aid in keeping it under control.

"The best is none too good", certainly applies to queens. There are a great many factors in producing a crop of honey but the one thing that is more important than anything else is to have a good queen at the head of each colony.

Council Bluffs, Iowa.

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Things Hoped for in Beekeeping

1. A device that will strain out the old bees as well as the drones, when shaking packages to ship, assuming that only baby bees are wanted in packages.

2. A 100% sure method of introducing queens under normal or abnormal conditions.

3. Queens that produce bees that are superior in honey gathering but not vicious to handle.—Jack Deyell.

Editorials

Old Father Time is a gentleman who has been referred to several times in these columns of late. He is not in the habit of jumping to conclusions like some of us poor mortals. If we are willing to wait **long enough,** he will give us some correct conclusions. Let's be patient and give him a chance. His great age entitles him to respect.

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Prospects for the coming season are encouraging. Precipitation has been quite general over the country and heavier than usual. Nectar plants are in unusually good condition and beekeepers in practically all parts of the country are looking forward to a good honey crop.

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Colony Resistance to AFB The article, "Susceptibility of Honey Bee Larvae to AFB", page 148, this issue, is worthy of a careful reading. The work done thus far seems to indicate that colony resistance to AFB depends on behavior characteristics, such as house cleaning rather than on physiological factors. As was brought out by Jas. I. Hambleton, senior apiculturist of U. S. A. Bee Culture Laboratory, at the recent Omaha meeting, it would seem that the quality of resistance to AFB is in the behavior of the bees and not in the blood. We shall await with interest the results of further scientific work done along this line.

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Sweet Clover and Alfalfa Weevils The sweet clover weevil, according to Prof. A. V. Mitchener, of the University of Manitoba, Canada, made its appearance in that province in 1939 and increased considerably in 1940. The University authorities have made a study of the breeding habits of this parasite. The weevil is found in the first six inches below the surface and the most effective method of eradicating was to plough the ground infected with pupae and larvae at the time they were emerging, or immediately after the hay was cut, about the middle of July.

There is also a weevil attacking alfalfa. This is a small, black four-winged insect, called the clover seed chalcid. It bores a tiny hole, almost invisable to the eye, in the seed pod. Between 30 and 40 per cent of the seed crop in Manitoba was infested last year. So far, no method of combatting this weevil has been found.

It seems there is always something to take the joy out of beekeeping. Let us hope that these pests may be kept within bounds and eradicated, if possible.

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More Non-Drip Honey Servers Needed We have heard parents say honey is so sticky that the children dribble it over the table cloth when they transfer it from the honey dish to the plate with a spoon. Some parents may also be guilty.

This difficulty may be over-come by using a non-drip server, the spout of which is manipulated by a small thumb spring which cuts the stream of honey off instantly as it is poured on bread, waffles, toast, and cereals, or into coffee or tea. A large sized server is made for pouring honey into measuring cups in the kitchen.

The non-drip server keeps honey away from dust. It has been observed that children as well as grown-ups enjoy using the non-drip honey server because they can regulate the stream of honey as it is poured onto the plate.

A wider use of these non-drip honey servers should be encouraged, not only for the convenience of honey users but also to increase honey consumption.

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To Sell We Must Tell In a recent national broadcast on advertising the speaker mentioned various kinds of advertising and brought out the fact that the total volume of advertising done during one year in this country amounts to over $2,000,000,000 which is about 3% of the total annual income of the U. S. A.

We wonder what would happen to honey if 3% of its value were used each year for advertising its merits. "It would go to town."

At present honey is being publicized on a national scale, by radio, screen, and syndicated newspaper items by Steve Hannagan Associates, New York City, in cooperation with the American Honey Institute, Madison, Wisconsin. The Institute is contacting national organizations han-

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dling foods inducing them to use honey and promote its sale. This will certainly help to increase the demand for honey and will eventually help all beekeepers. But the amount being spent to publicize honey is only a drop in the bucket compared with the amount we should be spending.

Don't forget that every dollar sent to the American Honey Institute is well spent, because it is used by the Institute for publicizing the virtues of honey.

To sell honey we must tell the world about its good qualities—either by word of mouth or printed page.

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500 Pounds Per Colony During the past decade there appears to have been a tendency among some beekeepers to increase the number of hives of bees. This is a laudible objective, provided each colony produces the maximum crop. This country could stand many more colonies of bees than it has at present. Approximately one colony for each 250 acres in the U. S. A. (according to the best available statistics) is certainly not overstocking the country with bees. Hundreds of carloads of honey that might be harvested each season go to waste for the lack of bees to gather it.

Statistics that were available prior to 1937 in the sheet put out by the Bureau of Agricultural Economics, Washington, D. C., show that during the years 1930 to 1936 inclusive the per colony average of honey harvested in the U. S. A. during the seven years was approximately 35 pounds. While comparisons may be odious and while we in this country may hate to admit it, we find, according to March, 1939, Dominion Bureau of Statistics, Ottawa, Canada, that the per colony average of honey in Canada 1930 to 1936 was approximately 74 pounds. This difference may be due in part to latitude, longer days in summer, etc. (at least we would like to think so).

During the recent Ohio beekeepers' meeting in Columbus one speaker mentioned a 500-pound per colony average from 50 colonies (somewhere west of the Mississippi). So far as we know this report is authentic. Think of it—25,000 pounds of honey from 50 colonies! It so happens that the writer visited this apiary a few years ago. The manager is a skillful beekeeper and gives very careful attention to every detail of apiary management. Two secrets of his success are, (1) an excellent strain of bees, and (2), an exceptionally good beekeeping location.

While such a high per colony average may not be obtainable generally over the country, it is a fact that much honey is lost each year because of faulty apiary management. We beekeepers might be further ahead at the end of the season, if, instead of seeing how many hives of bees we can operate, we would adopt as our slogan, **"More honey per hive."**

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Spoiled Honey, A Warning By this, we mean a good honey as it came from the hive but which has been ruined in flavor and color by over-heating or heating too long. Such a honey prejudices the eye of the housewife in advance and, worse yet, spoils the sale of all good honey. Sometimes the straining or filtering has been carried too far so that the crystal clear product lacks flavor and the housewife is suspicious because it does not **look** like what she has bought before nor taste like it.

Marketing at the Ohio Convention

The question of marketing and processing honey received no little attention on the last day of the Ohio State Bee Convention on January 30, last. Dr. Phillips, Chas A. Reese, President Lloyd C. Gardner, and Clyde Wheeler participated in the discussion. They deplored the fact fact that so much "bum" honey is masquerading under the name of honey. The honey is "bum", said Mr. Wheeler, because it had been improperly processed. Such honey gives all honey, good or poor, a bad name. The housewife puts it on her taboo list of foods for the table especially when she can buy Karo or table syrups of good flavor for perhaps less money.

Dr. E. F. Phillips has often spoken of the poor honey on the grocers' shelves largely because some inexperienced beekeeper does not know the first principles of preparing his honey for market. He does not have the proper facilities in the first place; does not have even a dairy thermometer to tell him when he is heating his honey above the danger point. On the other hand, when the honey passes through a large packer or a co-operative that has the proper skill and equipment, the flavor and color is not injured.

Mr. Reese who has the equipment

for determining the U. S. grades for honey made this statement: "Every time you heat honey whether high or low temperatures to make it so it will pour into containers you impair the flavor and darken the color slightly". The fewer times you heat honey the better the flavor and color. Long or continuous heat, even at low temperature, is more harmful than short quick heat at higher temperatures. Again, it is a mistake to put bottles of hot honey immediately back in the fiber containers where the heat would be prolonged. The honey should cool first. In commercial bottling this is not easy to do. If put in a stream of cold water, the honey next to the glass will cool but that in the center will remain hot. To cool all the honey in cold air would take too long and add to the cost of the product.

Filtering Under Pressure or Straining by Gravity Through Cheesecloth

The simplest way to clarify honey is to heat it to 140° F. and let it strain while hot through two or three thicknesses of cheesecloth by gravity. This method is simple and the one commonly used; but it does not remove all the fine bubbles and small floating particles. To do this, some bottlers force the hot honey mixed with a filter aid (an inert clay) through a filter press. Sometimes a fine bone charcoal is used. The last named may go too far in removing essential elements of honey, such as the colloids. Right here the Food and Drug Administration Federal Security Agency at Washington might declare that such a filtered product would not be honey. Dr. Lothrop, of the Bureau of Chemistry, claims that unless a comparatively rapid filter aid is used the honey will not go through the press. When this is used the product would be pure honey, provided ordinary care in following directions were employed.

Dr. Walton of the same Bureau told the Senior Editor at the Ohio Convention that if certain kinds of pulverized charcoal were used the colloids or essential elements might be removed but that he did not think the inert clay would cause such removal.

The Danger in Super Filtering

Dr. Phillips in his talk at the convention said that flavor and color could be reduced by filtering and if carried too far might put the honey in a class of syrups. He reiterated that any practice which would change the flavor or color of honey would be dangerous. In his opinion, filtering to excess as in trying to make a white honey out of a dark honey might also be dangerous.

It behooves those who use filter aid and a pressure filter to follow the directions carefully given out by Drs. Paine and Lothrop in all the bee journals in 1934 and 1935. A letter addressed to Dr. H. S. Paine will secure a circular giving full directions.

We are not here declaring against the filtering of honey of sparkle clearness, provided the process has not been carried too far or to a point where it might be classed as misbranded. We believe it is possible by the use of filter aid and a pressure filter to turn out a product that will meet all Government requirements for a pure honey. We should, under no circumstances, however, remove some of the colloids and change the color and flavor. If Uncle Sam should declare such honey misbranded it would throw a cloud of suspicion over all honey.

The so-called "manufactured comb honey" which never existed but which was given wide publicity under the name of Chief Chemist Dr. Wiley of the Bureau of Chemistry scared the housewife fifty years ago, so that all honey and particularly comb honey was put under suspicion. It did an awful damage to the honey business and practically cut the production of comb honey from seventy-five million pounds a year down to one sixth of that amount and the ghost of it still lingers.

So far we believe that most, if not all, such honey of crystal clearness on the market would be classed by Uncle Sam as a pure honey. There is a big lot of it on the market. We have tasted numerous samples, the flavor is still there and the color bright. There is a lot of it sold up in the Northwest, the purity of which no one has ever questioned, much less our dear old Uncle Sam.

In the meantime, every one should read the article by Dr. E. F. Phillips in the January issue of Gleanings, pages 17-21. It contains wholesome advice as well as a warning that every one should heed before some careless bottler makes a slip and puts a ban of suspicion on all honey. It took fifty years to overcome the damage of the Wiley Lie.

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Echoes of Ohio State Beekeepers' Convention

By E. R. Root

R. D. Hiatt, one of Ohio's successful beekeepers, in discussing spring management suggested a method of strengthening a weak colony, viz., to trade places with a strong colony—put the weak colony on the stand occupied by a strong colony and put the strong colony on the stand occupied by the weak colony, this exchanging to be done in the middie of the day during the fruit bloom

James E. Starkey, Apiary Inspector of Indiana, commonly called "Jim", in discussing colony management during the main honey flow emphasized the importance of supplying comb space—supers in time to avoid congestion, which is the prime cause of swarming. "Jim" said that some winter losses were due to excessive swarming, because swarms had old queens and many of the swarms did not build up to proper strength to winter successfully.

W. A. Coulter of Columbus, Ohio, showed diagrams and pictures of his honey house. He has visited various extracting plants and adopted the best in all. He emphasized the importance of having the equipment arranged so as to save steps. Every thing should be kept clean, neat and orderly, both in the building and in the yards so that prospective customers for honey may be favorably impressed. In the apiaries the hives should have hive stands with a slanting front to save bee time. It is a mistake to let heavy-laden bees waste time floundering in the grass

President Lloyd C. Gardner spoke on furnishing bees for the orchards. It is a mistake to use a big truck to carry a heavy load of bees as a big truck will bog down in the soft ground when a light truck with a

moderate load will save time. The colonies should never have less than seven frames of brood in order to do good work in pollinating. Unless care is taken for ventilation there will be melting down of combs.

Mrs. Ruth Tucker spoke on the value of pollen for hay fever. There are two kinds of hay fever, seasonal and perennial. She did not claim relief for the last named because it may be due to dust of any kind. It can be cured only by eliminating the cause.

Prof. Russell H. Kelty, of Michigan, showed various methods of installing various sizes of packages, and explained how adverse weather conditions, like coming from warm to cold weather would give the bees a setback. We have asked Prof. Kelty for his analysis of results from different sized packages, 2-lb., 3-lb., 4-lb., and 5-lb., after he gets his data tabulated. Prof. Kelty has his bees scattered in outyards over a large area in Northern Michigan. He winters his colonies in two stories, wrapped in felt paper with means for the escape of moisture between the upper and lower stories. Under the top cover he uses packing.

Dr. E. F. Phillips gave an interesting talk on "Behavior of Bees in Winter". In this he covered their reactions during seasonable changes of temperature, and winter, and brood-rearing—when and why it occurs. A better and more accurate brief of this talk than we can present here is given on pages 676 and 677 of our November issue.

At a later session he gave a talk on "Preparation of Honey for the Market". The substance of this is given on pages 17-21 of our January issue. In this he pointed out the dangers of overheating and carrying the process of filtering too far, with the result that the original flavors from the hive were to a large extent removed. In agreement with Phillips were talks by Dr. Dunham,

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Chas. A. Reese, Pres. Gardner, and Clyde Wheeler. The discussion concerning this vital question is given in an editorial on page 160.

A movement of prices and National advertising was discussed by Chas. G. Tollafield of The A. I. Root Co. See page 80, February issue.

Honey for the Bakery Trade was presented by Geo. P. Walton of the Bureau of Chemistry and Engineering, Washington, D. C. We have the manuscript for this and it will be presented in a later issue.

A Symposium on the Winter Losses of 1939 and 1940 was discussed by Dr. Phillips, Dr. Dunham, Prof. Russell H. Kelty, and Jas. E. Starkey. They all agreed that the loss had been severe. The talks of Phillips and Dunham are given on pages 676 and 677, November, and 12 and 13, January Gleanings. Prof. Kelty, while he agreed in part with both, was not in accord with all that Phillips had said. He uses a single wrapping of felt on two-story colonies and means for the escape of moisture. The principal loss was in April but more exactly speaking it was spring dwindling during three long weeks of bad weather. Mr. Starkey said winter losses in Indiana during the winter of 1939-1940 were heavy, also the abnormal backward cold weather that prevailed in April and early May caused further losses.

Jere Frazier, of the Lewis Co., in his subject "Are Beekeepers God's Chosen Children?", had us all guessing on what he was going to say. He explained that we would not be those chosen people unless we collectively asked for something so we would be on a par with the industries in the State. He showed what these others had done and how they enjoy State help that beekeeping in the State does not have. We are in a sub-department of the Ohio State University with Dr. Dunham's activities scattered in three divisions. He should have a department of his own. If we do not ask for it we will not get it.

We are informed that steps have been taken looking toward an increased budget for bee work in the State.

Mr. Chas. A. Reese on U. S. Grading, said he read with much interest Dr. Phillips' article on filtering honey in January Gleanings, with which he was in full accord. Every beekeeper should read it and put it into practice. He showed how a U. S. grading on honey would improve its sale. Often a housewife would refuse to buy a perfectly good honey because the price was so low as to excite her suspicion but a honey bearing a label of U. S. grading would sell readily and at a fair price.

He made one point that every beekeeper should paste in his hat, "Every time you heat honey you subtract from its flavor and darken its color". See editorial discussion.

Mr. Chrysler of Chatham, Ontario, spoke on the Ontario Co-operators. It has had its ups and downs but now is doing good work. The honey is put up in four and eight pound tins bearing an O. A. C. standard of quality. The honey is strained cold and therefore is not damaged by heat at the source.

He made it clear that any one interested in co-operatives were invited to come to their plant, see and ask questions.*

H. N. Wilson presented a set of moving pictures showing Pres. Gardner's outfit for extracting and filtering honey. Mr. Gardner is one of the extensive producers in the State.

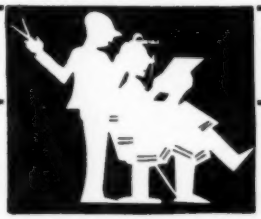
On the matter of marketing he explained that there were 27 chain stores in Ohio. The man who does the buying for these stores must have a standard product and toward that end he said that honey with the U. S. grading on the label had the preference, both from the standpoint of the housewife and the buyer of the chain stores. The honey should furnish a fair margin of profit or the stores would not handle it.

At the banquet on Wednesday night Prof. J. E. McClintock presented colored moving pictures of the Ohio Farmers' Alaskan Tour. The most of us have the impression that Alaska is a country of snow and ice. These pictures showing the beautiful growth of plant and tree life in all their green verdure made us think that we were in the most prosperous agricultural section of the whole United States. The seasons of growth are short but productive.

The election of officers resulted in the re-election of the old officers, viz., Lloyd C. Gardner, President; Emerson Long, Vice President; and W. E. Dunham, Secretary. Much credit is due W. E. Dunham and the program committee for the set-up and success of the meeting.

*This co-operative was writtenup in Gleanings for April and May issues.—Ed.

Just News



The Wisconsin Department of Agriculture has made a consolidation of its bee and honey activities, which will have far-reaching effect on beekeeping in Wisconsin. All beekeeping activities, including marketing, grading, and bee disease control, have been placed under James Gwin, who will be the chief of the new bee and honey section of the administrative division. By virtue of this office, Gwin will be Wisconsin's State Bee Inspector. Mr. Gwin's acquaintance is not confined to Wisconsin only. He served the State Beekeepers' Association of that state five years. He was a member of the executive board of the American Honey Producers' League four years and was its president three years.

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The Palmetto State Beekeepers' Association will meet in the Chamber of Commerce rooms in Columbia, South Carolina, Friday, March 14, 1941. At this meeting we hope to have Mr. E. R. Root, President of The A. I. Root Company, Medina, Ohio, Mr. A. D. Hiett, Manager G. B. Lewis Company, Lynchburg, Virginia, and Mr. H. J. Cary, Manager of The A. I. Root Company, Norfolk, Virginia. We are planning to have one full day of good beekeeping. Come and bring another beekeeper with you. Out of the state beekeepers are more than welcome.—**E. S. Prevost.**

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The Middlesex County Beekeepers' Association will meet at 19 Everett St., Concord, Mass., on Saturday, March 29, at 7 P. M. Mr. Chester A. Robinson, Principal of the Josiah S. Kendall School, and Mr. Mark R. Shibles, Principal of the Daniel Butler School of Belmont, will give a talk on "Educational Opportunities for the Beekeeper", illustrated with moving pictures and slides. Mrs. Halliwell of Billerica will be in charge of the supper served by the Ladies' Auxilliary featuring Chinese chop suey with noodles, green salads, bisquits and honey, honey mince and honey apple pies, cheese and coffee. —Arthur M. Southwick, Pres.

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The Virginia State Beekeepers' Association will hold its annual winter meeting at Hotel John Marshall, Richmond, Va., on March 22, 1941. A good program is being planned, and a good time is in store for all who attend. All beekeepers are urged to attend, as very important business will be discussed.—Henry W. Weatherford, Sec.-Treas.

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Just as we go to press the following was received from R. Spoerri, Secretary of Pelican State Beekeepers' Association of Louisiana:

H. R. 3210—Beetle Eradication Claims Commission, 77th Congress February 10, 1941

(Introduced by the Honorable F. Edward Hebert)

Please request all of your Congressmen and Senators to support the above bill which provides for the creation of a Claims Commission that will receive and investigate all claims of beekeepers in Louisiana who have suffered as a result of the dusting of poisons during the White-Fringed Beetle Eradication and Control Campaign. We will appreciate your giving this publicity in your March journal, asking that all beekeepers and officers of Beekeepers' Associations in the Union write their Congressmen and Senators to support this bill, as it will not only benefit the unfortunate beekeepers in the White-Fringed Beetle districts of Louisiana, but will establish a precedent for all beekeepers in other parts of America who may be endangered by the same or a similar program either now, or at some time in the future. IN UNITY THERE IS STRENGTH! If all beekeepers in the United States stick together, not only on this issue, but on other matters as well, our industry will attain the protection and status that is now enjoyed by other organized industries.

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"The Modified Two-Queen System" being tested at the Ohio Experiment Station differs from the "Standard Two-queen System" in that in the modified system two queens are used during the spring build-up period. At the beginning of the clover flow the colony is reduced to a **single queen system.** Free copies of "Modified Two-queen System" are available. Write to Division of Bee Culture, Ohio State University, Columbus, Ohio.

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Dr. Harry H. Laidlaw, Jr., has been appointed to succeed the late Thomas Atchison as chief apiarist of Alabama. Dr. Laidlaw is a native of Texas and a graduate of Louisiana State University.

From North, East, West and South

NORTHERN CALIFORNIA, Feb. 5.

Weather: Here in the Bay District, we had 40 days of rain during December and January, not all day rain but rain every day. The total shows a good sized rainfall, far above normal and almost double the amount of rain for the same period last year. To the south of us, the amount of rainfall diminishes until before we are out of the territory we are expected to cover, less than half of our rainfall is reported. To the north of us, the rainfall has been a little bit heavier. Reaching the snowline in the mountains, we have snow, and at this time it is real snow—10 to 15 feet deep. So from where we are where we seldom see frost, it is only a ride of a few hours until we are in real eastern winter, with **the emphasis on winter.** Is it any wonder we have a difficult task before us when we try to solve the question of the effect of weather on the production of a season's crop of honey? It is difficult indeed.

Condition of Bees: The report at the January meeting of our county association shows from two frames partly filled with brood to six frames of brood with plenty of pollen and nectar coming in to make good increase in bees, and notwithstanding our unusual rainfall, most of the colonies show a surplus of honey. It is difficult to judge what the eucalyptus crop will be. The movement of bees is light. The fields are yellow with mustard. The almond orchards are in full bloom.

Honey Market: Reports indicate that honey is moving quite satisfactorily at retail. A visit among the stores shows a marked improvement in packages and labels—there is room for more. Honey should set the example for all other food packages and labels.

Miscellaneous: The membership in county associations show an increase and most of the members are also members of the State Association. We are finding that membership cuts quite a figure when it comes time for the State Association to go before the State authorities for the simple rights of beekeepers. Now that we are going to the Federal Government for what we believe is due the beekeeping industry, we find more than ever that we must have members. Best of all, our beekeepers are seeing the benefit of a stronger organization and are working to double the membership in 1941.—Cary W. Hartman, Oakland, Calif.

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SOUTHERN CALIFORNIA, Feb. 1.

Weather: Rain, rain, with prospects for more. Rainfall is well above normal over most of Southern California. We do not remember a season when the beekeeper has said "Stop, we have had enough". It is the deep rain-soaked soil that carries the honey-producing plants through the long hot days of summer. Cool weather during the past month has held back many of the early blooming plants but a few warm days and the bloom will be showing on the black sage and many of the annuals. Green grass covers the ground. Flowers and honey-producing shrubs are putting on a nice growth.

Crop and Market: Most of the beekeepers have disposed of their honey. There is little if any change in price so far as we can learn. Market is steady with no active demand. Beeswax is strong in demand with a slight advance in price.

Miscellaneous: We know little of the "back-lot" beekeeper here in Southern California but will say of the "back-country" beekeeper, this should be a satisfactory season for him. Not for a number of years have the rains been no nicely distributed with practically all of the moisture soaked into the soil.

We just received a long interesting communication from the Secretary of the California State Beekeepers' Association painting a most encouraging picture of the industry and the benefits we will receive from the efforts that will be put forth with the

money that has been raised for advertising honey. Here is hoping that it all comes true for the beekeeper surely needs something to bolster up his courage.

Bees have not consumed a large amount of stores. Most colonies are in good shape with from three to five frames of brood. Alfilerae is showing some bloom and with a few warm days it should yield enough to stimulate the bees to do their best in brood-rearing.

Among the cover crops (a crop planted in the orange groves to be turned under), is mustard which has been blooming for several weeks. Bees have been busy on it and if being industrious counts for anything they should be getting some nectar. Other growths in the groves such as vetch, malva, and all kinds of weeds, each help a little. All of these will soon be plowed under and many orchardists are already busy. Of the number of colonies that will work on the orange bloom only a small percentage are now on the locations. Many beekeepers prefer to move their bees to the orange groves just as the blossoms begin to open. This gives satisfactory results and lessens the danger of the bees annoying the people living nearby.—L. L. Andrews, Calif.

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TEXAS, February 1.

The weather for January was very much to the beekeepers' liking. The bees consumed little stores and continuing rains throughout the state made the growth of winter annuals possible. At the end of the month all of the long-time beekeepers interviewed are unanimous in saying that we have the best prospect for a honey crop in 1941 that we have had for years and that the bees which were cared for last fall are in excellent condition. As yet there has been little cold weather in the beekeeping parts of Texas; however, the weather has been uniformly cool which would indicate that not much abnormally cold weather is yet to be expected. In southern Texas the weather has been cool but with the sudden changes in temperaure the sun has shown during much of the winter. The bees have been confined to the hives only short periods of time. The abundant rains have not made it necessary for them to go any great distances.

Conditions: The reports on bees from various parts of the state indicate that the beekeepers are either ready or preparing for a honey crop this year. Due to lack of publicity the beekeepers are not expecting any great increase in the price of honey but they are expecting to do all they can to increase the amount of honey produced to aid in the general food production this year in the defense program.

Miscellaneous: As usual, numbers of people are making inquiries as to beginning beekeeping. This is to be looked for due to the prospect for an early spring with abundant flowers. The January beekeepers this year are discussing ways and means of helping in National Defense by the better care of their bees and use of better bee equipment.—H. B. Parks, San Antonio, Texas.

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NEW MEXICO, February 1.

Weather: The weather thus far this winter in the northern portion of the state of New Mexico has been one of the most severe since 1917. At my own mountain ranch located in the heart of the Sangre De Cristo Range the total fall of snow thus far passed the ten foot mark for depth yesterday and it is still snowing. Undoubtedly the southern part of the state would be grateful for a portion of this moisture and no doubt will be benefitted in a way as the irrigation water available this season should be the best ever. Practicing part cellar wintering combined with open wintering has given us the advantage of weather such as this. The bees are kept on their summer stands near the bee cellar until the middle of January or there-abouts, when, believe it or not, they get a cleansing flight even here. Then placed in the cellar, they withstand the confinement better and are not inclined to dysentery. A winter here is always five months long. With heavy fall flows of heavier darker nectars not the best for wintering this plan is proving the most effective. As the ground has been buried under snow here since October and a good first year stand of the biennial clover was made, we look forward to the best flow ever the coming season.

Crop: As reported before, the crop the season of '40 was one of the best in many years due to effective rain-

fall at the proper time and also due to the abundance of build-up flora. It can be said of most of the northern and central portion of New Mexico that the main honey flow floras themselves are very dependable, but this does not mean that a crop is obtained every year for oftimes the blow flies take the clover and the white butterflies cover the alfalfa, and available nectar, both preceeding and following the main flows, is many times nil.

Prices: Not unlike the honey prices in general those obtained by us in this state are pitifully small. It does not seem possible to get even six cents any more and to net more than four, less containers, is perhaps more the rule. Although the beekeepers in the northern and central portions as a rule pack out their own pails there are a limited few who sell the sixties and though less trouble, also reap a smaller price when the labor expended would have earned an income in a state that is not a high wage-payer. Although there are few cities of any size in this state it is a fact that even these are not really worked thoroughly as far as their potential market for honey is concerned. This alone would affect prices and could not help but improve them, for the crop average is nothing to talk about. Therefore, a better demand would help the price if only a little. It is that little that comes on the profit side of the ledger.

Miscellaneous: Colony conditions are as a whole good and moisture conditions above the average. Since there will be little killing of alfalfa in the lower countries and more water than for many years, the crop prospects for the coming season are very bright. It is to be hoped that the beekeeping fraternity as a whole in this state will be ready for what should be a bumper year by spending a little more time with the bees this spring and accord them in a measure the time they deserve and must have to fulfill the production of a profitable crop. I do not say this in a critical way at all for my shortcomings outnumber most but it is nevertheless a fact that the bees maintained in this state as a whole are given far less attention and time that they do deserve and most of this carelessness occurs in the spring preceding the flow when it could much better be missing after the flow.—C. A. Baltzley, Pecos, N. M.

COLORADO, February 7.

Weather: Except for the cold snap which we experienced at the beginning of the winter, there has been no severe cold or exceptionally warm periods. At the present time, however, we are having a little preview of the spring. Sprouting seed, in sunny places, are transformed into miniature plants, buds on elms and maples are racing to burst into flowers, and agriculturists are polishing their plows, preparing for the turning of soil. On the other hand, if our subterranean weather prophet, the ground hog, is to be depended upon, we should have another six weeks of winter, as after seeing his shadow, he turned back for another nap.

The precipitation during late fall and the winter has been very satisfactory to both farmer and beekeeper. It put the ground in an excellent condition for the growth of plants when spring comes. Accumulations of snow in the mountain areas are reported to be much heavier than it has been for several years past, insuring early water for next season's irrigation.

Conditions of Bees: Generally, the condition of the colonies is good, where sufficient stores were provided. Bee activity has been at a minimum as there has been only brief flying periods during the winter. This has been beneficial to the bees, giving them time only for necessary cleansing flights and shifting their cluster to new stores.

It has always been my habit, as long as I have had bees, to dig into the brood chambers of colonies in the winter months when there was a nice warm day so that the bees could fly. No bad effect on the bees has been noticed from this practice. It has, however, kept me posted as to what is going on inside a colony of bees in winter. Late last December I found some colonies with small patches of unsealed brood in various stages. They have been rearing brood ever since. Today, February 7, the largest patch of brood measures more than five inches across. In this locality a large percentage of the colonies start brood-rearing in January and by the middle of February most of them are so engaged.

Miscellaneous: On page 73, February Gleanings, editor E. R. Root gives an interesting account from Southern Florida. Seeing such things as snakes, while doing seventy, is not so good.—G. A. Pauli, Pueblo, Colo.

LOUISIANA, February 1.

Weather: Moderate temperatures and abundant rain have combined to give an early start to willow and white Dutch clover which are our main dependence for spring upbuilding and, usually, a surplus. However, February and March are our months of uncertain weather conditions, and we are all sitting "with our fingers crossed" waiting to see if we will get off to a good start or if we will have to feed.

Market: Talking for us little producers, the demand has been brisk since October. Many beekeepers have already sold their entire crop and little bottlers are combing the neighborhood for enough honey to carry their trade through until the new crop comes in. It is indeed a peculiar situation which causes a small producer to offer new business to his competitor and to refuse to take on new customers—but we hope that this trouble becomes chronic.

Miscellaneous: Louisiana was probably the first state to outline regulations for State certification of honey. This measure was intended to serve as an encouragement for better handling and packaging of honey. It failed to work out as we intended, as only a few men availed themselves of the advantages which it might bring them. It really was a good introduction to a new customer, and, if the requirements were faithfully met, the customer became a permanent asset. Clean, clear honey, neatly packed and attractively labeled is not easily displaced, even through offers of "cut prices". Dealers have a habit of staying with a product which has always been up to standard.

Several other states have stressed grading rules, instituted public grading requirements for specified marketing channels and passed laws which made labeling a nuisance factor to the average packer. Some of those regulations were evidently made to annoy competition, and they sometimes "bounced back" to annoy those who made them.

Even our Federal officials seem to have made some mistakes in outlining grading rules. From the Glass Packer, we quote:—"From the California Agricultural Experiment Station comes analyses of 37 different types of honey characteristic of California. According to the station, 22% of the natural California honeys exceeded the Federal standard of 0.24 ash, wherefore a plea is made for a higher ash tolerance to prevent discrimination against California honeys."

This incident would seem to indicate that the application of "laboratory technicalities" which offer some interference to the free marketing of a highly variable product—like honey— are sometimes (?) more of a "boomerang" than an advantage. Regardless of personal preferences or scientific devaluation of a large proportion of our production, we are still faced with the fact that "honey is honey" and the general public should be left to make their own selection in both color and flavor. Fewer regulations coupled to a better marketing system may yet be found to be the solution of our problems.—Geo. W. Bohne, Luling, Louisiana.

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MONTANA, January 30.

Weather: Early in the fall we had very fine rains, but they were too late to be of any particular value to the beekeepers. The rainfall was very heavy in the mountains. There are no bees kept in the mountains and the big snowstorms that pile up only help us in form of irrigation. The passes on the Rockies are practically bare of snow. The bees are flying about every day following a severe cold spell that lasted for several weeks.

Market Conditions: Market conditions have improved some lately. Most of the honey around here has been sold. There are only a few producers with a little honey for local trade. One party has 600 cans but he said it would have been sold if he had had enough for a large car. The largest part of our honey went to Canada at from 4¼ cents to 5 cents. They reported a shortage on two carloads of honey for England when the embargo went into effect.

Beeswax is being sold here for 23 cents a pound. Most of it has already been sold.

Miscellaneous: There was some loss of bees around the first of the year from a long cold spell. Many of our hives of bees were none too well supplied with bees or feed to begin winter. I ran into one hive the other day that had whole frames of brood. That has been very common

here, causing some colonies to run out of honey.

There are lots of supplies left over from last year, because of the short honey crop. Some that were left over are being put together now; other supplies are being ordered and delivered.

There are many orders of honey that can not be delivered, also there is a general rise in the price of most products including honey. I suspect this makes the honey business look better, hence the effort towards this year's crop.

The directors of the Montana Honey Producers met at Helena, January 21. We had a very good meeting. The old laws were revived and we are presenting some amendments to the legislature hoping that funds will be made available to carry on the work of bees properly. They are also asking that the work be transfered from the Department of Agriculture to the Department of Entomology. No one offered us the keys to the city but we were lucky for we never needed them. We found all very democratic and helpful.—Parson Pile, Corvallis, Montana.

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IOWA, February 7.

The short course for those counties where disease clean-up is being conducted on an area basis is being planned for April. It is planned that this short course will act as an educational support for the clean-up effort which has been made in the county during its history of local co-operation, with the inspection service. The program is planned to give special emphasis to those items of disease diagnosis, how disease works in the apiary, clean-up methods and how to stay clean in the presence of disease.

This short course program is a venture by the Extension Service in an effort to be of every possible support to the inspection service in its effort to reduce disease in the counties who are co-operating through the supplement of local funds.

The annual spring series of radio discussions over WOI, 640, will begin Monday morning, March 31st, at 6:30 a. m. The experience of the definite program followed in the spring and fall series of 1940 programs indicates that such a feature is much to be desired, therefore, a general theme will be continued through the entire series. The subject of this theme, "The Worker Bee", will be presented in such a manner as to offer the fundamental facts of biology and from this develop the colony problems of management. It seems quite evident that a large number of people who are attempting to produce honey are not thoroughly familiar with the fundamental facts of bee life and consequently they are attempting to carry forward honey producing operations by the "trial and error" method.

The old custom will be followed again of supplementing the general theme with news items of state and national interest. This feature of the radio discussion has proved to be quite popular with Iowa producers. The problem of expansion of operations during the season of 1941 is a matter of considerable concern to a large number of producers at this time. There is a general hesitation which is the result of two factors, first is that of available pasturage and the second factor is that of honey prices.

The general feeling is that the prices for honey cannot go much lower and there are several indications that the general situation may improve during 1941. This improvement in the price situation may well carry over into 1942.

The Agricultural Extension Service is planning to inaugurate short courses in some selected counties representing different area conditions in the state. These short courses will carry out a definite program of presentation of material considered to be fundamental in the operation of colonies of bees in any section of the state. The application will be made direct to the various areas as they may exist. There has been effort made during the last ten years to supply those who are becoming interested in beekeeping with basic information. For this reason some have become discouraged and have stepped out of honey production, others are going along with a handicap which they cannot afford to carry. It will be interesting to note the results of this work at the end of the season. It seems to be a revival of a program which was so successfully conducted up to ten years ago. —F. B. Paddock, Ames, Iowa.

SOUTH DAKOTA, February 7.

Weather: We have all kinds of it; and some we would like to give away. However, the majority insists that this has been a pretty decent winter, by and large. Which seems to freeze the argument down to the point that the weather is always nice—it's only a fellow's state of mind that is good or bad. (A 30-mile northwester today. Temperature: zero to 10 above.)

The most spectacular chiller of the season was the November 11 blizzard. It killed cattle, sheep, and turkeys by the herd through exposure and suffocation; but it did not put the bees on the hummer. Hundreds of colonies yet unpacked were half to totally covered with snow. Some yards were left that way. I dug mine out and packed them. In one yard the metal cover entrances had been left wadded shut. The burlap wads were saturated from inside moisture and frozen solid. They had to be chiseled out with a hive tool. The inside of those hives also contained ice from condensation. Another yard in which all cover entrances had been left open was in better shape. Although the bottom entrances had drifted shut the inside of these hives were dry and the bees were as comfortable as a pigeon's ear. It's emergencies like these that sell top entrances. You don't have to sit on your face to pack bees with toppers.

The Crop: The honey supply seems to be pretty well sold. The price is still downward, if anything. Some chains are selling 5's at 39c, a price almost too low to print.

Miscellaneous: A group of beekeepers met at Brookings, January 7 to form a State Association, the first determined effort that has been made in the matter for a decade. A fair representation was present from the middle eastern section and several new acquaintances were made among South Dakota beekeepers. Prof. L. L. Davis of the Horticultural Department of State College initiated proceedings and in the course of events A. G. Pastian, Brandon, was elected president. M. W. Thompson, Toronto, was elected vice president, and the writer secretary- treasurer.

Among other things a resolution was endorsed requesting certain legislators to recommend an appropriation for bee inspection work. Most of the inspection the last few years has been on private initiative which makes it somewhat sketchy.

The Association agreed to have an annual winter meeting, the time and place to be set shortly in advance of it.—J. F. Norgren, Junius, S. D.

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SOUTHWESTERN IDAHO, Feb. 5.

Weather: Up to date we have had a very mild winter, and this late in the season we are not likely to have any serious cold weather. We have had lots of rain in the valleys and lots of snow in the mountains, and the ground is well saturated and honey plants should be in excellent condition.

Honey Sales: Honey has been, generally speaking, a drug on the market, and at this time there is a large percent still in the hands of producers. The packer doesn't seem to be in a mood to buy, and due to this fact some honey has been forced on a distress market. The sales to retail stores have been good, but considerable price-cutting has been prevalent, due to the slow sales in large lots.

Bees: Bees went into winter quarters in excellent condition and due to the past three mild winters, there were not as many bees packed as in past years. As yet it is hard to tell just how bees will winter, but the weather has been excellent so far and no time were the bees confined to hives more than a few days without a flight, and I believe most producers left sufficient feed on last fall. I notice in protected places the soft maples are starting to bloom, the pussy willows are budding, and it looks like spring is not far away.

Miscellaneous: There is a move in some of the western states to secure commodity loans from the AAA on honey. Idaho had a hearing January 23, and we have encouraging prospects. This should be a good thing for the honey producer, which would enable him to borrow on his honey at, as we understand, 3%, and he wouldn't have to sell on an unwanted market. Most producers aren't too optimistic at this time but I believe when spring comes and they can get out into the bee yard their old enthusiasm will return. I believe this is true with most bee men.—A. D. Wood, Meridian, Idaho.

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MAINE, February 1.

Weather: The weather has been favorable since the bees were put in winter quarters in November. This may not appear to be of so much importance where bees are wintered in cellars, but I have a feeling that bees winter better where the temperature is fairly steady, than they do when there is a wide extreme in temperatures outside.

A winter repository must be pretty well insulated if the bees do not notice the outside changes. We do not disturb our bees during the period of confinement. If necessary, in extremely cold weather, we can start a fire and warm the cellar up to a safe point. This year we have had plenty of snow and the cellar is well banked with it. This tends to help maintain a uniform temperature. If it gets too warm a bit later we can leave the door open to the outside during the night when the temperature is not too low. This changes the dead air gradually, giving a supply of fresh, and lowering the inside temperature. The heavy fall of snow protects the honey plants, giving hope of a favorable season ahead.

Conditon of bees at this time is normal, possibly a bit above. It is never safe here to count too much on favorable conditions at this date. Too much can happen if spring is delayed and weather unfavorable after putting bees on summer stands. At present we can only say that conditions of bees and honey plants are good. In southern and central Maine so far as we are informed, conditions are favorable to date.

Market: The bulk of the honey crop produced in Maine has gone out of the hands of producers, but Maine markets most of its crop locally. Part of the crop is sold direct to the retail dealers and a part held by producers for retail trade. At our place when people come for honey or call up by phone they expect us to have it. They buy in small lots, almost never enough to take care of their needs for the year. While we like to dispose of the bulk of our small crop before Christmas, and usually do, we plan to hold enough to supply the needs of customers, whether stores or individuals, as they call for it. With us the demand is pretty well over by the time maple syrup and strawberries come into our markets.

There are a few who call for honey well into the summer. Then there is a pause until they begin asking for the new crop. Some of the stores don't want to take on honey until the weather is cold. Others want it a little before we can get it off the hives. We try to cater to the whims of the dealer, and usually he does know what his customers want. We do try to impress the retail trade with the fact that honey is never quite as good as when it comes fresh from the hives, that their customers miss much if they do not get honey until cold weather. I think those who do not buy until late have an idea that honey is a medicine for colds but do not know that it is a delicious wholesome sweet and food for sick or well. We try to convert them and sometimes do, but find as a rule: "those convinced against their will are of the same opinion still".

Prices fluctuate but little from year to year. When the people prosper, they use more honey, when times are hard, they buy less. This great county of Aroostock depends on potatoes for its "cash money". When potatoes sell for less than cost of production, farmers, and all others who depend on farmers for their living, are forced to go without some things. Honey has so many substitutes as the buying public sees it, that it requires more work to dispose of honey in these hard-off years. —O. B. Griffin, Caribou, Maine.

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ONTARIO, February 4.

Weather: For the past five weeks here in central southern Ontario we had typical winter weather for this section with only two or three days in which the temperature went above freezing. Today it was 4 below zero at 7 A. M., and with much humidity in the air it seems much colder than that. Snow came soon after the rains mentioned in last issue had ceased, and we have from six to ten inches covering the ground, so clovers are well protected. Bees locally had their last flight during the first week of November, so naturally we are hoping for an early spell of mild weather so that they may have a cleansing flight. In-

cidentally this reminds me that in the February issue of Gleanings an editorial advises beekeepers in the northern states to "dig down into their winter clusters not too often, during January and February and report what they find". While this advice is given only to beekeepers in the northern states, I have always thought that our climate in Ontario was similar to that of some of the more northern states. As for our locality, one such examination of a colony would mean its destruction as we have not had a day above freezing and covers of hives have many inches of snow and ice on them and it would be a hard matter to get into a brood nest. Of course, we would expect to find some brood in many colonies especially if they have a lot of empty comb space and what used to be referred to as the "winter nest". And in my humble opinion, too much of a "winter nest", so-called, causes the loss of hundreds of colonies every year. When, as is too often the case, we find colonies uneasy in late winter and early spring, with a large quantity of brood present, we do not think that because this is **natural** for the bees that such a condition is favorable for bees.

Bees if left to themselves in the swarming season will swarm and swarm until the parent stock is worthless in-so-far as honey surplus is concerned. It is quite **natural** for the bees to do this but very unprofitable from the beekeeper's viewpoint. We use queen excluders to confine the queen's activities to one brood nest when if left alone she would quite naturally extend the brood nest all through the supers. And so we might go on ad infinitum.

When I stated in the last issue of Gleanings that a number of Ontario beekeepers feed all their colonies solid in the fall, of course I meant that they operated from 500 to 1000 colonies each; and if they look into the brood nests at this date very little brood will be in evidence as there is practically no empty space left for brooding. The colonies so prepared will be found to be tightly clustered, and clusters appear to be very small. But no need to worry about that as they are very quiet and the vitality of the bees is being conserved, and when warm weather comes just watch those bees so wintered, boom ahead!

Market: Very little honey is moving at present and judging from conditions in two towns nearest to us, there is either very little honey held by wholesalers or dealers in honey, or else the price is held so high that merchants are not stocking it. At any rate most of the stores in these two towns have no honey in stock and during the past few weeks we have had numerous inquiries from them asking for honey that we were unable to supply. As mentioned in the last issue, beeswax appears to be very scarce and to be going higher in price. Just recently a firm that makes candles, etc., for the Roman Catholic Church, phoned me from a point over 300 miles away. When informed that we had none on hand they asked if we would promise them next year's production. That seemed too far ahead so no promise was made. It appears that the Catholic Church uses large quantities of candles, in ritualistic ceremonies. I suppose that the war is interferring with shipping to such an extent that the usual source of beeswax is cut off for the present.

Before closing may we be excused for butting in just a bit, possibly to show our ignorance, on this discussion between our good friend Allen Latham and other contributors? Of course, we refer to this matter of comparative merits of the queen versus the workers. The writer of these notes is of very very ordinary intelligence, to say the most, and yet in this discussion he believes that he knows as much about the intricate theories concerning evolution as the mental giants—i.e. he knows nothing. Some years ago a well known writer was describing the wonders of the cell in which the worker bee is reared—truly one of nature's marvels. And then he said in words to this effect—just consider the millions of years that the bees must have been learning to make these wonderful cradles to rear their baby bees in! We merely asked him this question which was not answered, "During all these years while they were learning to make these marvelous cradles, how and where were the baby bees being reared?" Yes, the writer believes with a lot of other people who are called simple minded that the best answer to these questions that will never be solved by people with finite minds, is found in the first clause of the greatest of all Books, "In the beginning God created".—J. L. Byer, Markham, Ontario, Canada.

Talks to Beekeepers

M. J. Deyell, Editor.

Rabbits and Bees

During the latter part of December I was out hunting rabbits, — at least I walked around through the woods enjoying nature. I'm not keen on killing rabbits. It is seldom I get one. I'm a poor shot. But I do enjoy getting out in the open especially after a fall of snow. Well, I didn't see a rabbit that day but I did see something very interesting and this is how it came about:

We have an apiary in an orchard at the side of the woods I visited. The bees in this yard are very well protected against prevailing winter winds. Some of the hives are not packed or insulated heavily so I decided to lift up one end of an upper brood chamber (sometimes called the food chamber). As I did so an interesting sight met my eyes. It so happened that the center of the winter cluster in this hive occurred between the two sets of combs and when I lifted up one end of the upper brood chamber I split the cluster of bees into what appeared to be two equal parts. The entire cluster was spherical in shape and occupied seven spaces between combs.

Now, I have read all the literature I can lay my hands on that refers to the nature of the winter cluster and it seems apparent that all the authorities are not in entire agreement as to what actually goes on within the cluster during a cold spell of weather in the North. I hope I may live long enough to find out the truth on this matter.

But to get back to what I observed, —the center of the cluster, immediately after I lifted the end of the upper brood chamber, consisted of bees that were loosely clustered, in fact, they were moving about, while the outside rim, or periphery of the cluster which, by the way, was about two and one half inches thick) consisted of bees that were packed together tightly and they were practically motionless. In times past I have lifted up the ends of upper brood chambers during cold and freezing weather but apparently I was blind to what I might have seen. Most of us are born blind, (whether or not we will admit it), like the man in John 9:1-38.

To make sure that my eyes were not deceiving me, I opened up two other hives and found identically the same condition. These observations tend to confirm in my mind, one theory; that bees are cold blooded and that the bees in the rim or outside of the cluster being packed tightly together do actually retain some of the heat generated by muscular activity by the bees in the center of the winter cluster, which center temperature never goes below 57° F. and may go up to 94° F.

If you want to see an interesting phenomenon split a winter cluster of bees in two on a cold day and observe quickly and carefully the construction of the cluster. I hope to get a close-up picture of this, soon as possible. I would not recommend this practice generally, except for experimental purposes, as it is considered inadvisable to molest bees during the winter.

Spring is on the Way

You readers who already keep bees know the peculiar feeling experienced as spring approaches and especially during a mild sunshiny day. We long for the balmy days when we can examine our bees. In some of the Southern states normal colonies are collecting pollen and nectar from early sources and in some areas it may be necessary to provide comb space—supers for the storage of incoming nectar. This brings me to the first of three things I wish to say in this Talk.

(1) We Should Work With—Not Against Bees

Somehow, we are likely to get off on the wrong foot in this bee-

keeping business. We may get wrong ideas on managing bees. We cannot force bees to do things they do not want to do. If we are to be successful in securing large crops of honey we must take time to learn what bees do naturally and why they do it, then work with them.

It is possible to drive an automobile without kowing much, if anything about what is under the hood. We can manipulate the levers by rote and get on fairly well. But some day, perhaps when we are away on a fishing trip, far from a garage, a knowledge of what is found under the hood of a machine might come in handy.

In beekeeping, we may learn to do some things by rote, to a certain extent, but unless we know why we perform certain manipulations we are likely to do the wrong thing at the wrong time and consequently fail in beekeeping. And this leads up to my second point.

(2) We must Discover and Understand Beekeeping Principles

Dale Carnegie in his book, "How to Win Friends and Influence People", says that he has seen the application of principles brought out in his book revolutionize the lives of people. Mr. Carnegie didn't make this statement to boost his book. He was simply stating a fact. And please don't misunderstand me when I say that if you readers will apply the beekeeping principles that I am about to enumerate your lives may be revolutionized. At least you will be likely to secure larger crops of honey and that should be one of the objectives in beekeeping.

A 500 Pound Average from 50 Colonies

One of the speakers appearing on the program of the Ohio State Beekeepers' meeting recently, told about a beekeeper in the Northwest who secured this high average last season. It so happens that I visited this apiary a few years ago. The owner certainly knows and applies the principles that underly success in beekeeping. He is in an unusually good beekeeping location and that is one of the secrets of his success.

It seems safe to say that if all beekeepers in this country would get right down to business and actually take the time necessary to discover the principles that underly successful beekeeping then apply those principles, that the average per colony yield of honey in the U. S. A., which at present is 35 pounds, might be doubled and possibly tripled. Such apiary management would help to save some of the millions of pounds of nectar that go to waste annually for the lack of bees to gather it.

And this brings me up to my third point which I have already made, in preceding paragraph, viz:

(3) We Must Apply Beekeeping Principles to Insure Success

This is easier said than done. In my own case I'll have to admit that I have sometimes failed to apply the principles that have been discovered, and, therefore, failed to secure the maximum crops of honey. I deserved failure.

What are the Principles of Beekeeping

They are simple and may be found where honeybees live, and have lived naturally for thousands of years, possibly millions, in hollow trees and crevices of rocks. If, for example, we examine carefully the interior of a bee tree we will find that the colony of bees, in order to live, has three things, **Protection, Comb Space, and Food,** and that these constitute three principles that should be considered in modern beekeeping, viz;

(1) Bees must have **protection** from the elements.

(2) Bees must have **comb space,** which is room for building combs in which to store honey and pollen, also for brood-rearing.

(3) Bees must have **food**—honey, pollen and water.

The application of these principles to modern-day beekeeping is what may be called apiary management. Management is the most important part of beekeeping. In succeeding talks we shall go into the problems of apiary management but in closing this talk, just a word on the first principle.

Bees Must Have Protection

When man first began keeping bees they were housed in straw skeps, crude boxes and sections of hollow log gums. Many colonies—too many—are still kept in such makeshift equipment.

The selection of good beekeeping equipment, hives, frames, etc., is very important. A good hive protects bees from the elements. In the North it is necessary to give colonies in single-walled hives additional protection during the winter months.

Asked and Answered

Leaving Honey Over Inner Cover During Winter

Question.—I have two colonies of bees with each hive consisting of a brood chamber and one super. The super of each hive now has honey in it which accumulated during the late summer and after the last taking of the honey. I have no need for the honey and have no particular interest in removing it now, although I do wish to take it later on. I have been told that if honey is left in the supers, and the supers remain accessible to the bees, that they will hatch new bees in the supers in the early spring. I have, therefore, placed an inner cover with your bee escape, on the hive through the winter and will take the honey later. The colony of bees is about the ordinary size. Please advise me if any harm is likely to come to the honey by leaving it in the super until needed, with it separated from the brood chamber by the inner cover with the bee escape. Is it probable that the crowding of the entire colony into the brood chamber without access to the super will result in overcrowding and subsequent harm to the colony of bees? In North Carolina where the winters are mild, compared to the colder sections of the country, is it likely that the bees will need the additional food furnished by the honey in the super for their winter food supply?—Sample B. Forbus, North Carolina. Letter dated Jan. 2, 1941

Answer.—The honey in the super placed directly over the brood chamber of each colony and separated by an inner cover containing a bee escape, should remain in good condition until you wish to extract it in the spring. However, in the event of the coming of warm weather before you remove the honey, the wax moths might get into the combs and destroy them. To avoid this, you might remove the bee escape in each inner cover, permitting the bees to circulate through the combs in the supers. It hardly seems possible that the queens would go up into these supers, through the small hole in the inner cover, although they might. It is possible, also, that some of the honey now in the supers may be needed for bee food, this spring. If you wish to develop very populous colonies, and we assume you do, an ample amount of honey is needed for brood rearing. It is the very populous colonies that store the most surplus honey. A great many beekeepers now operate colonies in double brood chambers. Such colonies certainly do pile up the surplus honey when it is available.

How to Deal with Cross Colony

Question.—A few years ago I found a large swarm of bees and hived them. I noticed they were very cross, so killed the old queen, and replaced her with a new one. She was accepted and laid well. But the bees continued to be cross so the following summer I again killed the old queen and bought a laying queen. No improvement was noticed so last spring I introduced another queen which was accepted, but the result was as before.—Donald Ham, Ohio.

Answer.—Occasionally a colony may persist in being cross regardless of whether or not it has been requeened. However, requeening with a queen from a gentle strain of bees should correct this condition. In some instances, skunks molest colonies at hive entrances. One can usually tell from the appearance of the alighting-board whether or not skunks are present in the apiary. If they are, a good shotgun is a handy weapon to have.

How to Avoid Heavy Winter Losses

Question.—I had bees in some woods last winter and lost 20 colonies. Is it too damp in a woods? Some of the honey looked mildewed to me. Our bee inspector said it was a natural place for bees.—O. G. Courson, Pennsylvania.

Answer.—The winter loss of 1939-1940 was rather excessive. In the majority of cases it was due to a shortage of winter stores and inadequate protection against cold weather. Weather conditions during the late summer and early fall were unfavorable for pollen and nectar plants. Consequently, many colonies went into winter short on honey and pollen. If you winter in single-story brood chambers, the combs should be practically filled with honey in the fall. If you winter in double brood-chambers, the top super, usually called the "food chamber", should be quite well filled with honey in addition to some honey in the bottom brood chamber. When each colony of bees has an abundance of winter stores of good quality and when the bees do not eat all of the honey out of the combs during winter, they are likely to winter well, provided of course, the apiary is reasonably well sheltered from the prevailing winds. It is an advantage to have some protection, in the way of packing or insulation, for each hive.

American Honey Institute News Notes

Let us aim to get honey on the table as a food needed in the diet of the American family.

• • •

The Institute is greatly pleased with the help promised it by Departments of Markets in the various states and colleges in connection with emphasizing honey in the Nutrition Defense Program. The Health of the nation depends on the individual. It is our duty to keep fit and honey will help us do it.

• • •

On February 5th Harriett Grace was interviewed on honey by two persons over WLS, the Prairie Farmer Station. This station perhaps reaches the largest radio audience of the Middle West. Mr. Page told the audience that he had started the day right by eating Honey Jelly. Mrs. Louie said that she was especially fond of Honey Butter for use on griddle cakes and waffles. In this interview the important part honey plays in bakery goods and candy and the importance of honey in the daily diet were brought out. Beeswax candles received a boost. The point that no one in this great era of science has been able to improve the product of the busy little bee was stressed.

• • •

Pillsbury's have a full double page advertisement in the February 1st issue of BAKER'S HELPER, in which was a new formula for cherry crown cake. Honey is incorporated in the glaze.

• • •

Honey for Breakfast Week begins Easter Sunday morning. One of the largest food concerns in the country writes, "Smart idea—Honey for Breakfast".

• • •

"Honey the Clock Around" is an attractive leaflet with excellent ways to get honey in the daily diet. It has the hands of the clock set at 7:30 for breakfast with the caption, "Start the day in one sweet way!" "Use honey on your fruit, cereals, and in your morning drink whether it be coffee, cocoa, milk, or tea—It's delicious and nutritious!" Recipes for baked apple, honey breakfast muffins and apricot conserve are given. For lunch we have recipes for fruit salad, honey cinnamon toast, chocolate cake with a luscious, smooth-as-velvet frosting that is easy to make. It keeps well and does not get sugary. Afternoon tea has recipes for date nut bread, honey butter, and dessert ginger cake. For dinner we have broiled grapefruit, baked ham, casserole of sweet potatoes and oranges. The evening snack has honey egg nog and sandwiches. Sorry there was room for no more recipes.

• • •

Are you planning a Honey Exhibit for your store or fair? If so, perhaps there may be a suggestion in this for you.

Place an electric light behind a display of honey in glass.

A mirror as a background, or on top of a table adds to the effectiveness of the display.

A "Honey Quiz" with prizes of honey awarded may be worked out.

A loud speaker brings returns—considering that it can be used year after year, it is not expensive.

One might ask various persons to be responsible for it at various hours of the day.

Prepare an interesting script to fit your locality. One might say:

Good morning, Fair Folks. Isn't this a beautiful Fair Day and isn't the exhibit a honey?

Folks, do you start the day right by eating honey?

Do you know that honey supplies quick energy?

Do you know that honey keeps baked foods moist?

Do you know that honey flavors as it sweetens?

Do you know that honey gives a grand flavor to our meals?

Do stop at our booth and take home some leaflets that contain tested honey recipes.

Stop at a honey booth and take some honey to the folks who bee not here.

Do you use honey on cereals and fruit?

Do you use honey on ice cream? Next time you want to have a delicious ice cream sundae, pour some honey on your ice cream. My, but it is good! Maybe you will want to sprinkle some chopped nutmeats over it.

What shall we have tonight for dinner? I'll tell you. Let's have some good griddle cakes with honey.

Honey is a home grown sweet. It is here right from the apiary today. Stop at one of the booths and ask what flavor they have.

Honey flavors salads in a unique way.

Of course, you always use honey on baking powder biscuits!

You don't need a dessert when you serve honey.

Do you use honey in canning your fruits? If you don't, why not write to the American Honey Institute at Madsion for free recipes.

Spinster Jane Says;

Outside the snow looks mighty deep. In fact we've had the worst block-up of the season, and roads will not be good for some time.

Were our bees wintering outside, this big fall of snow would be considered a blessing, but when they are safe in their black-out in the cellar, we are not apt to consider it as such. Selfish creatures, are we not, and naturally so! We think only of ourselves, our worries, our successes.

Some subversive elements have been at work in the bee-colonies. One, a mother-mouse, built herself a snug nest in one hive, but our G-Man in this case did good work. That G-Man's name is "Trouble", a Persian Kitten, luckily wished upon us. I threatened putting "Trouble" in the cellar when we found and confiscated the nest, but Boy was horrified. What that kitten would do to the bees, jumping upon the hives, etc., etc. But mice in the cellar means they must come to kitchen and pantry, when hungry, and that is where the kitten did her stuff. In fact she had done it already, for there were neither young mice nor old ones either, and not a stir do we hear in walls or ceiling any more. "Trouble" did a good job mopping up the enemy, and there were no prisoners, either. She immediately despatched those. Many a drive she (G-woman) made, and each time she captured her objective.

John, all unwittingly, did more mischief than either cat or mice. He brought some harness to be mended into the kitchen, and started pounding right over the bees' winter quarters, riveting broken parts into one. I had forgotten all about the bees, until having to go to the cellar, I heard them. And were they hungry! Or was it excitement? At any rate they were making a great commotion which ceased only when we succeeded in convincing John that pounding on the floor over bees just isn't done in good bee circles.

Nearly every farmer in the community sees blue ruin facing us, unless they do a great deal of planning, and work things out differently than in the past. Dairy farmers are especially disturbed. And here is the problem confronting them: Milk must be pasteurized before being sold, and this has to be done at a central plant at some distance. This means expense. Then this milk cannot be sold for human consumption unless barns have cement floors, are whitewashed, kept swept clean, free from dust, cobwebs, etc., and all "gold dust" must be drawn far far away. Commendable all, as required by dairy inspectors, but there is so little left for the dairy-farmer!

It wouldn't be feasible for all of them, but why not change things a bit. The great argument is fertility to the soil. The more cattle the more fertility added.

It sounds easy, but it's twice as hard as BEEKEEPING, and that is the business I advocate for those of us who love it. It means growing clover, and clover being a legume, may be as good for the soil as "gold dust". There are commercial fertilizers too, not so very expensive.

We have a neighbor near us who often gets out of butter, and what takes its place with her children? Honey, simply honey, and they are a husky lot of youngsters too.

The price of honey has mounted with the lessened supply, and it will not lower appreciably for some time. Not until a bumper yield comes, and then we can stand it better.

Right now honey is a wonderful medicine for coughs and colds. Honey and lemon-juice surely touch and cure that tickling in the throat, and help cure night coughing. It's not hard, either, to persuade children to take such medicine. Hot lemonade, with honey to sweeten it, is pretty good medicine, as well as being a very peasant drink.

Publicity, and still more publicity is what we need in beekeeping. Too few know the real value of honey, and we should keep on broadcasting its many virtues. There is no rock so hard but what it may be changed by the constant dropping of water upon it, so let us keep the drops of truth falling upon deaf ears, and some day those deaf ears must hear and understand.—Spinster Jane.

Heads of Grain from Different Fields

Honey Baked Beans

In the interest of those people who use honey in their cooking, I am sending in this recipe of my wife's: 1 lb. dry navy beans, 1 medium-sized onion, ¾ cup honey—(to this add sufficient hot water to make a cupful). ½ lb. bacon, 1 cup tomato soup. Soak beans over night. Parboil in salted water, and then drain. Put beans in casserole, add onion (chopped), tomato soup, and honey. Dice bacon and mix with beans, leaving a few slices for the top. Bake in a moderate oven (350°) for 5 hours. As they bake add more tomato soup, in addition to the cupful, sufficient to keep them moist. The constituency can be regulated as desired by the use of the tomato soup.—U. F. Abbs, Pittsburgh, Pa.

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Proposed Revision of Simplified Practice Recommendation R156-37, Containers for Extracted Honey, Before Industry for Acceptance

The Standing Committee in charge of Simplified Practice Recommendation R156-37, Containers for Extracted Honey, has approved a revision of the recommendation and the Division of Simplified Practice of the National Bureau of Standards has mailed copies to the producers and packers of honey, to the container manufacturers, and to a representative group of distributors, consumers and others interested, for consideration and approval.

As originally promulgated in 1934, the recommendation established a simplified schedule of standard stock types and sizes of containers and packages for extracted honey.

In March, 1936, the Standing Committee proposed that the schedule be revised to include jars holding 1½ lbs. and 3 lbs. avoirdupois in place of the pint and quart sizes formerly recommended. This change was proposed in the interest of uniformity and better marketing practices. A further revision was proposed by the Standing Committee in July, 1936, to include a jar holding 2-lbs. avoirdupois. This change was made in recognition of the indicated demand for this size and as a means of assuring increased adherence to this recommendation. These two proposed revisions were approved by the industry effective **February 1, 1937.**

Another revision is now being proposed by the Standing Committee to include the small package of 2 oz. for an individual serving in restaurants, diners, etc., and for the retail trade. Also, all references to the type or kind of container have been omitted in the current proposed revision.

Mimeographed copies of the proposed revision, now before the industry for approval, may be obtained upon request to the Division of Simplified Practice, National Bureau of Standards, Washington, D. C.

The annual meeting of the Michigan State Beekeepers' Association at Lansing, Feb. 5 and 6, 1941, was one of the largest in the history of the State.

Buy and Sell Here

CLASSIFIED ADS

Only responsible advertisers and honest advertisements will be admitted to these columns. References required from new advertisers not known to us. Rate—7 cents per counted word each insertion. Each initial, each word in names and addresses, the shortest word such as "a" and the longest word possible for the advertiser to use, as well as any number (regardless of how many figures in it), count as one word. Copy should be in the 10th of month preceding.

HONEY FOR SALE

AMBER honey in new 60's. George M. Sowarby, Cato, N. Y.

AMBER HONEY, clover flavor in 60's. K. A. Gallant, Jordan, N. Y.

CHOICE white clover honey in new 60's. Noah Bordner, Holgate, Ohio.

EXTRA QUALITY clover extracted. Howard Grimble, Holcomb, N. Y.

FANCY clover honey, case or quantity. E. J. Stahlman, Grover Hill, Ohio.

FINE clover honey, case or car. Leslie A. Davis, R. R. 2, Union City, Ind.

FOR SALE—Extracted and comb honey. M. W. Cousineau, Moorhead, Minn.

WHITE CLOVER, 6½c; amber, 5c, f.o.b. Frank R. Parmelee, Le Roy, N. Y.

HONEY—Light and light amber extracted. F. W. Lesser, Fayetteville, N. Y.

FRANK RASMUSSEN, Greenville, Michigan. Fancy comb and extracted honey.

CHOICE MICHIGAN clover honey in new 60's. David Running, Filion, Mich.

CHOICE clover honey in 60's. R. C. Bish, successor to Moore Apiaries, Tiffin, Ohio.

FOR SALE—Fine quality clover honey in 60's. Leland Farnsworth, Davison, Mich.

CLOVER extracted, extra white, new sixties. Irvin Van Devier, Medina, Ohio.

GOOD CLOVER extracted in sixties, 6c; amber, 5½c. H. G. Quirin, Bellevue, Ohio.

LIGHT AMBER honey for sale in barrels. Stevenson's Apiary, Apalachicola, Fla.

WHITE and amber honey in new 60, 10, and 5-lb. tins. Harry T. Gable, Romulus, N. Y.

NEW CROP clover and amber honey, packed in new 60's. H. B. Gable, Romulus, N. Y.

FOR SALE—Fancy Iowa white clover extracted honey. Kalona Honey Co., Kalona, Iowa.

MICHIGAN'S finest well-ripened white honey in new 60's. Jay Cowing, Jenison, Mich.

MICHIGAN White Clover in new sixties. Orval Dilley, 345 S. Sheldon, Charlotte, Mich.

FANCY TUPELO—60's and barrels. Ten-lb. pails. Mrs. William Nisbet, Sumatra, Florida.

HONEY in 60's; buckwheat, $3.00; amber, $3.60, F.O.B. here. William F. Vollmer, Akron, N. Y.

CLOVER and buckwheat comb honey, $3.00 and $2.50 case. L. F. Howden, Fillmore, N. Y.

CLOVER HONEY in sixties and comb honey. George Eykamp, 1221 Akin, Evansville, Indiana.

DARK FALL HONEY, fine flavor, 5c. Dearing Bros., 94 Deerhurst Blvd., Kenmore, N. Y.

ORANGE, palmetto and mangrove honey in new sixties. Peter W. Sowinski, Fort Pierce, Florida.

1940 CROP AMBER HONEY in new sixties, fine quality. Meyer Toom, Route 4, Knoxville, Iowa.

EXTRACTED clover and amber honey. Quotations on request. Scott Traxler, Scottsburg, N. Y.

AMBER COMB honey, $2.50 case; extracted, 5½c; buckwheat, 5½c. C. B. Howard, Geneva, N. Y.

FINEST white clover extracted, liberal discount at our place, by truck. N. B. Querin, Bellevue, O.

TUPELO HONEY, new 60's and barrels, 5 and 10-lb. buckets. Marks Tupelo Honey Co., Apalachicola, Fla.

FOR SALE—1940 crop white clover extracted honey in 60-lb. cans. L. S. Griggs, 711 Avon St., Flint, Mich.

MICHIGAN White Extracted in 60's. Strictly high grade in new cans. M. H. Hunt & Son, Lansing, Mich.

SOUTHERN Minnesota light honey, 5c lb., cans exchanged, cash and carry. Patten Apiaries, Medford, Minn.

FINEST QUALITY white clover honey, $7.00 per case, 120 lbs. Sample 10c. Arthur Thayer & Sons, Freeland, Mich.

CLOVER honey in new 60's. Clover, 5¼c; amber, 5; buckwheat, 5c. F.O.B. honey house. Walter Rink, Port Hope, Mich.

WHITE extracted and amber, also few cases of white honey in shallow frames. Herman Crowther, Cass City, Mich.

HONEY FOR SALE—All kinds, any quantity. H & S Honey & Wax Co., Inc., 265-267 Greenwich St., New York, N. Y.

LET US show you how you can save on your honey purchases. We also buy honey. H. Blitz, P. O. Box 3452, Philadelphia, Pa.

NEW CROP clover-basswood honey, water white in new cans. Send for sample and price. A. A. French & Son, Theresa, N. Y.

FANCY white clover extracted honey, can or carload. Price on request. Sample 15c. Jos. H. Hoehn & Sons, Ottoville, Ohio.

COMPLETE line comb and bottled honey, pure clover. Also packed in 5's and 60's. Central Ohio Apiaries, Inc., Millersport, Ohio.

TWO TONS shallow frame chunk comb. Unlimited supplies of white and amber extracted and comb. Dillon and Sons, Adrian, Mich.

HONEY PACKERS—Write us for prices on carload lots of California and western honeys. We stock all varieties. Hamilton & Co., 1360 Produce St., Los Angeles, California.

SELECT LOTS white sweet clover, also processed white honey in 60-pound tins. A. I. Root Co., 224 West Huron Street, Chicago, Ill.

CHOICE white sweet clover, also extra light amber honey in new 60-pound tins by the case or carload. Dadant & Sons, Hamilton, Illinois.

10 TONS clover white extracted honey, case, ton or carload. Write for prices and sample. LEROY C. KEET, 1003 Leray Street, Watertown, N. Y.

NEW YORK State Comb and extracted honey, buckwheat and clover, any quantity, all size packages. Five-pound pails my specialty. Edward T. Cary, Midland Ave. and Tallman St., Syracuse, N. Y.

RASPBERRY HONEY blended with milkweed honey, two of the best honeys of Northern Michigan. Packed in 60-lb. cans, for 7c a lb. In 10-lb. cans for $2.00. We pay postage. Sample for 20c. Elmer Hutchinson & Son, Lake City, Michigan.

WE ARE SOLD OUT of Michigan clover honey. We thank you. It is no wonder our 1940 crop sold so well. Inspected: grades range water white to extra water white: moisture contents, UNDER 18%. Honey buyers, why run any risk in getting a uniform quality of Michigan clover honey this coming season? Contract for your supply NOW. We should be extracting our this year's crop of Michigan clover honey, in July. For more than 60 years under one management. Experience counts. Write us at once your coming requirements. Again thanking you, we remain very truly yours. E. D. TOWNSEND & SONS, Northstar, Michigan.

HONEY AND WAX WANTED

BEEKEEPERS TAKE NOTE—We will not guarantee any honey buyer's financial responsibility and advise all beekeepers to sell for cash only, or on C.O.D. terms except when the buyer has thoroughly established his credit with the seller.

CASH PAID FOR carloads and less than carloads of extracted honey. Send sample and best price. C. W. Aeppler Company, Oconomowoc, Wis.

CASH for all kinds of honey. Especially interested in beeswax, amber honey and good comb. Dillon and Sons, Adrian, Mich.

WHITE and light amber extracted and comb honey. George Eykamp, 1221 Akin, Evansville, Indiana.

WANTED—White clover honey. New cans only. Clover Blossom Honey Co., 712 Kossuth St., Columbus, O.

WHITE and amber extracted honey and beeswax. Alexander Company, Reynolds Rd. at Dorr, Route 3, Toledo Ohio.

WANTED—Carlots honey; state quantity, shipping point and price. Mail sample. Bryant & Cookinham, Inc., Los Angeles, Calif.

WANTED—Comb, chunk comb, white and light amber extracted honey. Any amount. Central Ohio Apiaries, Millersport, Ohio.

HIGHEST cash returns made the day we receive your beeswax. Write for shipping tags and quotations. Walter T. Kelley Co., Paducah, Ky.

WANTED—White and amber extracted honey, any quantity, also Beeswax. Write The Fred W. Muth Co., Pearl & Walnut Sts., Cincinnati, Ohio.

Get Running's Bees

And Get Honey—They Satisfy

The kind WE use in our extensive Michigan Apiaries, where WE produce honey by the carload. All Italian Stock. Service guaranteed. Two-pound package with choice untested Queen, $2.45; Three-pound package with choice untested Queen, $3.15; Choice untested Italian Queen, 75c; Choice tested Queen, $1.50. 10% discount on 50 or more. 15% discount on 500 or more.

David Running Apiaries
Sumterville, Alabama

Mountain Gray Bees and Queens

Write us now how many packages of bees or queens you will need for spring delivery. We sold more bees and queens last season than ever before, yet could not fill all orders coming to us. Try us again. Bees and queens guaranteed to please; no disease. Prices, 2-lb. pkg. with queen, $2.25; 3-lb. pkg. with queen, $3.00; queens, 75c. 15% discount to dealers and large buyers.

Bolling Bee Co.

Bolling, Alabama

LEST YOU FORGET

the good rule to go by. Buy your

Italian Bees and Queens

from

Alabama Apiaries

Mt. Pleasant, Ala.

2-lb. packages with queens, ... $2.25
3-lb. packages with queens, ... 3.00
Queens, ... .65

No order too small or too large. We are in position to make prompt shipments. Our aim—once a customer always a customer.

Italian Bees and Queens

From a strain that has been disease resisting for 15 years. Good honey-gatherers. Write for prices.

R. D. JENKINS,
San Benito, Texas

JENSEN'S
Bees, Queens and Service are Dependable

Book your orders as early as possible. It helps us serve you. Our many years service in American beekeeping is your guarantee of satisfaction. No disappointments.

Packages with Select 1941 Queens

	2 Pound.	3 Pound.
1- 25,	$2.10	$2.75
26-100,	1.95	2.55
101-500,	1.80	2.35

Loose-Queen packages add 10c per package.
Queenless packages, deduct price of queens below.
Select untested queens, 1-25, 65c ea.; 26-100, 60c ea.; 101-500, 55c ea. For disease resistant stock make your reservations; supply limited.
All queens clipped FREE.

JENSEN'S APIARIES
Macon, Mississippi, U. S. A.

Quality Package Bees

No one can beat our Prices
Quality Considered

J. E. WING & SONS
Cottonwood, Calif.

"WE ARE READY"

to supply you with
Italian Bees and Queens.
Write at once for shipping date.

AL WINN
Rt. 2, Box 161, Petaluma, Calif.
Member California Queen-breeders' Association.

OUR IMPROVED QUALITY-BRED THREE-BAND ITALIANS

We are offering you our improved quality bred Italian bees and queens. We have thousands of satisfied customers. Did you get your orders filled last spring when you wanted them? If not, then place your orders with us. We guarantee prompt service. Write for our booklet and prices.
Flowers Bee Company, Jesup, Ga.

WANTED—All grades of comb and extracted honey. Bee supplies and honey containers for sale. Prairie View Honey Co., 12243 12th St., Detroit, Mich.

WANTED—White clover honey in new 60-lb. cans to pick up with truck within 100 miles of Toledo, Ohio, in lots of 5 tons or less. Write. Box 11, care of Gleanings, Medina, Ohio.

FOR SALE—Fine quality queen mailing cages; Root quality bee supplies, both comb and extracted honey. Orders filled promptly. Write us or drive over M53, fifty miles north of Detroit. Hamilton Bee Supply Co., Almont, Mich.

FOR SALE

QUEENBEE PAINTING outfits $1.00 postpaid. Southwick Apiaries, Waban, Massachusetts.

100 SUPERS for the 4¼ sections, half price, no disease. Fairland Apiaries, 2 Acacia Dr., Dayton, Ohio.

BUTTERNUTS or hickory kernels, 70c lb.; black walnuts, 60c lb. C. Smola, 3824 East 127th St., Cleveland, Ohio.

10 OBSERVATION hives for sale cheap. 3000 individual sections, and fixtures. Lose Bros., 206 E. Jefferson, Louisville, Ky.

FOR SALE—Complete extracting equipment with 60 swarms bees, inspected, Mrs. George H. King, Clifton Springs, New York.

BEST QUALITY queen mailing cages, freight paid. Free sample. Bee shipping cages. Vernon Homer, Rt. 5, Menomonie, Wis.

YOUR WAX worked into high quality medium brood foundation, 15c pound; 100 lbs., $10.00; thin super, 22c. Fred Peterson, Alden, Iowa.

ATTRACTIVE prices on bee supplies and comb foundation. Send for catalog. Saves you money. The Fred W. Muth Co., Pearl and Walnut Sts., Cincinnati, Ohio.

WRITE FOR CATALOG. Quality bee supplies at factory store prices. Prompt shipment. Satisfaction guaranteed. The Hubbard Apiaries, Onsted, Michigan.

COMB FOUNDATION at money-saving prices. Plain, wired and thin section. Wax worked at lowest rates. Comb and cappings rendered. Robinson's Wax Works, Mayville, N. Y.

GLASSWARE, tinware, bee supplies at factory prices and package bees and queens. Write for our price list. Alexander Company. Reynolds Road at Dorr St., Route 3, Toledo, Ohio.

FOR SALE—We accumulate bee supplies at our warehouses, slightly shopworn and fully serviceable, but discontinued for lack of sale. Write for complete bargain list. G. B. Lewis Company, Watertown, Wisconsin.

FOR SALE—On account of illness will sell apiary outfit consisting of forty colonies of bees, power extractor, hundred fifty supers—ten frame hives. Certificate of inspection furnished. L. Appold, Sebewaing, Mich.

8 BASSWOOD seedlings, or 10 RUSSIAN OLIVE—2-foot, or 6 PINK HONEYSUCKLE shrubs, or 8 JAPANESE BARBERRY, or 25 CARAGNA (hedging)—1 foot, or 3 transplanted BASSWOOD 3-foot, or 2 transplanted PUSSYWILLOW (early spring pollen), 3-foot—nectar producers, each group postpaid for $1.00 bill. Checks require 10c exchange. Local Lewis-Dadant Dealer. Nicollet County Nursery, St. Peter, Minnesota.

FOR SALE—Cheap, 265-60's used once. Ellsworth Apiaries, Tarkio, Mo.

LABELS—NEW DESIGNS. Samples free. Thoughtgift, 50 Presque, Rochester, New York.

THE ONLY complete line of wax rendering equipment ever offered—the "Perfection" Line. A size and type suitable for every commercial beekeeper. Write for descriptive circular. Robinson's Wax Works, Mayville, N. Y.

SAVE MONEY by letting us work your wax into wired or regular comb foundation. Large catalog describes everything. You pay only wholesale factory prices, as we have no agents. Walter Kelley Co., Paducah, Kentucky.

FOR SALE—My irrigated truck farm including 120 colonies of bees, located in the beautiful Taos Valley, Taos, N. M. Reason for selling is my age. Bees are guaranteed free from disease. G. O. Ainsworth, 1638 E. Bennett St., Compton, Cal.

BEES AND QUEENS FOR SALE

GOOD ITALIAN QUEENS. White Pine Bee Farms, Rockton, Pa.

PACKAGE BEES. Satisfaction guaranteed. Sternenberg Bros. Lockhart, Texas.

60 CENTS EACH for bright three-band young Italian queens. D. W. HOWELL, Shellman, Georgia.

BEE MEN—Bring your cages. We fill with bees at 35c per pound. Write us. Elevation Apiaries, Milano, Texas.

NORTHERN CALIFORNIA package bees and queens; first quality three-banded Italians. Geo. E. Smith, Rt. 2, Yuba City, California.

OVER WEIGHT packages and young queens at a price you can afford to pay. I can fill your early orders. D. P. Green, Deland, Fla.

WANTED—To sell 250 colonies bees or experienced man to work on shares. Certificate of inspection furnished. Paul Madison, Winnebago. Nebr.

BEES AND QUEENS—2-lb. pkg. with queen, $1.80; 3-lb. pkg. with queen, $2.25. Queens, 60c. Nuclei prices on request. Barricklow Bros., Sylvester, Ga.

FOR SALE—300 colonies of bees in northwest Florida. Inspection certificate furnished at time of sale. M. C. Berry & Co., Box 684, Montgomery, Ala.

FOR SALE—90 colonies of bees in 8-frame Root hives, run for comb honey. Free from disease. State inspected. Priced to sell. J. H. Pope, Lorimer, Iowa.

CAUCASIAN package bees for April and May. 2-lb. pkg., $1.75. 3-lb. pkg., $2.25. Untested queens, 50c each. Safe arrival. Lewis & Tillery Bee Co., Greenville, Ala.

ITALIAN QUEENS from Government resistant stock tested for honey production, gentleness, etc., each 60c. Quantity discounts. Also packages. A. W. Nations, Donna, Texas.

TINDAL'S Leather-colored Italians, gentle and best honey-gatherers. 2-lb. pkg. with queen, $2.00; 3-lb. pkg. with queen, $2.50; 1 queen, 65c. M. I. Tindal Bee Co., Greenville, Ala.

CAUCASIANS—Tested queens, $2; untested, $1; 10, 75c; 50, 65c; 2-lb. packages with queens, $2; 3-lb. packages, $2.50. Miller's Caucasian Apiaries, Three Rivers, Texas. Oldest exclusive Caucasian breeders west of the Mississippi.

Still On the Job

Berry's Reliable Bees and Service

The best to be had

Price List of our Package Bees with Young Queens

	2-lb. Pkgs.	3-lb. Pkgs.	4-lb. Pkgs.
1 to 10	$2.10 ea.	$2.75 ea.	$3.25 ea.
10 to 25	2.00 ea.	2.60 ea.	3.15 ea.
25 to 100	1.95 ea.	2.55 ea.	3.10 ea.
100 up	1.80 ea.	2.35 ea.	3.00 ea.

Queen bees, 60c each.

Pure Three-banded Italian Bees and Queens. We guarantee safe arrival, pure mating, prompt shipment, no disease, and unexcelled quality. Wings of queens we clip free of charge on request.

M. C. BERRY & CO.
Box 684
Montgomery, Ala. U. S. A.
Oldest Active Shipper of Package Bees

DOES Experience PAY?

For nearly 60 years the Weaver family have been in the bee business. We believe that we know how to produce and ship good queens and packages. That for quality and service we are second to none. No disease. Safe arrival and satisfaction guaranteed.

Caucasians — Italians

	2-lb. pkgs.	3-lb. pkgs.	Queens
1-25	$2.15	$2.85	$ .70
26-99	2.00	2.65	.65
100-up	1.85	2.50	.60

Weaver Apiaries

Navasota, Texas

Honey Crops

are not made by promises. It takes real quality packages and queens. We have them. Order early before all the best dates are taken.

	2-lb.	3-lb.	Queens
1- 25	$2.10	$2.70	$.70
25-100	1.95	2.55	.65
100- up	1.85	2.45	.60

No disease. Safe arrival and satisfaction guaranteed.

J. M. Cutts & Sons

Rt. 1, Montgomery, Ala.

Make 1941 More Prosperous

Use our three-banded bees and queens and assure yourself of getting the best bees obtainable. Selected young laying queens. 100% safe delivery. A strain of bees selected and bred for superior quality since 1919. Write for our reasonable prices.

N.B.Smith & Company

Calhoun, Alabama

Imperial Italian Queens

Package Bees Nuclei Caucasians

Be prepared for that eventuality—higher honey prices—better crop prospects. Grow more honey at less cost. Try Imperials for increase, for replacing winter losses, for pollinating.

Untested queens	$ .75
2-lb. pkg. with queen	1.98
3-lb. pkg. with queen	2.49
1 fr. nucleus	2.85

THE COFFEY APIARIES
Whitsett, Texas

ITALIAN QUEENS. W. G. Lauver, Middletown, Pa.

UNEXCELLED QUALITY Italian bees and queens, bulk or package. Large or small quantities. Fast service, fair price. Satisfaction guaranteed. Sowhatchee Apiaries, Hilton, Ga.

OFFERING for the first time—disease resistant bees. Each package headed with a queen daughter of Government secured stock. Prices reasonable. Eggleston Apiaries, Diamond, La.

MARCH queens, packages, and nuclei from our Florida bees. Disease free, best Northern stock, competitive delivered prices. Discount for early orders. Coggshall & Son, Box 91, Minneola, Florida.

FOR SALE—120 ten-frame colonies of bees, 2 stories, extra hives, supers, foundation, power extractor, and other equipment. Guaranteed disease free. In good orange location. Rex Packard, Sanford, Florida.

ITALIAN BEES and Queens: 2-lb. packages with queens, $2.00; 3-lb. packages with queens, $2.50. Queens, 50c each. Your order shipped within 24 hours after received. No disease. Plantersville Apiaries, Plantersville, Miss.

IF YOU WANT bees to make honey try our three-banded Italian bees and queens. Extra good workers and easy to handle. Satisfaction guaranteed. Write for our circular. Alamance Bee Company, Graham, North Carolina.

FOR SALE—200 colonies of bees, guaranteed free from disease, ten-frame, very reasonable; also eight-frame extractor, foundation, equipment for shallow comb honey, etc. J. Semon, 15001 Upton Avenue, Cleveland, Ohio.

CAUCASIAN Package Bees. Reduced price but same high quality. Long-tongued, gentle, prolific, dependable workers. 2-pound package bees with queen, $2.00; 3-pound package, with queen, $2.50. Safe arrival and satisfaction guaranteed. P. B. Skinner Bee Co., Greenville, Ala.

THE NORMA ROY APIARIES. 2-lb. bees, 1 comb with queen, $2.00; 3-lb. bees, 1 comb with queen, $2.50; additional comb, 40c. Combless packages, 2-lb. bees with queen, $1.75; 3-lb. bees with queen, $2.25. Book your order, no deposit required. Norma E. Roy and Son, Hessmer, Louisiana.

SEVERAL hundred colonies of Italian bees, young queens, hundreds of extracting supers, thousands of perfect frames, (all ten-frame equipment) and in fine condition, including packing cases, queen excluders, steam boiler, liquefying tank, several hundred gallon honey tanks, power radial extractor, truck and entire equipment for first class honey business, will be sold reasonable. Only real buyers need apply. Owner, care Gleanings, Medina, Ohio.

"QUALITY" 3-band "Honey Girl" Italians, carefully reared queens, Northern production tested stock. Package bees with queen introduced and a comb of brood, 2-pound package, $2.25; 3-pound pkg., $2.75. Combless packages, with queen caged, 2-pound package, $2.00; 3-pound package, $2.50; additional comb of brood, 50c, additional pound of bees, add 50c. Satisfaction guaranteed. No disease, full weight, safe arrival, no delay, shipments made on day requested. Certificate of inspection with each shipment. 10% deposit to book order and reserve shipping date in advance. "Quality and service, our motto." A. D. St. Romain Apiaries, Diamond, Louisiana.

GOOD COMBLESS PACKAGE BEES AND QUEENS. The choice of many leading beekeepers of the U. S. and Canada. Outstanding records for honey production. Gentle, well bred, three-banded Italians. New cages—full weight packages—select young laying queens—no drones—no disease, 2-lb. pkgs. with queen, $2.45 each; 20 or more, $2.30 each; 50 or more, $2.15 each; 100 or more, $2.00 each. 3-lb. pkgs. $3.15 each; 20 or more, $3.00 each; 50 or more, $2.85 each; 100 or more, $2.00 each. If wanted by mail, postage must be added. Select young laying queens, 75c each; 20 or more, 70c each; 50 or more, 65c each; 100 or more, 60c each; postpaid. Our shipping season opens April 10th. Order early and have shipping time reserved. We have one of the largest, best equipped queen and package establishments in the South. H. C. Short, Fitzpatrick, Ala.

HELP WANTED

YOUNG BEEMAN—To work in commercial apiaries. Elton L. Lane & Son, Trumansburg, New York.

WANTED—Experienced queen breeder, also helpers for caging packages. J. E. Wing & Son, Cottonwood, Calif.

WANTED—Capable, willing, experienced helper in central New York apiaries, May first to November first. Roger C. Lane, Dunedin, Fla.

WANTED—Helper for northwestern Minnesota apiaries. Give age, experience, reference, wages expected. Must be hustler. E. E. Salge, Weslaco, Texas.

WANTED—Dependable assistant, commercial honey production. Room, board furnished. Give particulars, age, experience, wages. Don Barrett, Howell, Michigan.

WANTED—Reliable beeman with clean habits with some experience. Give personal particulars, experience and wages expected. Room and board furnished. Leland Farnsworth, Davison, Mich.

INDUSTRIOUS young man with good health, habits and some experience for coming season. State age, weight, ability, wages expected, and references. Board, room furnished. Lavern Depew, Auburn, N. Y.

WANTED TO BUY

WANTED TO BUY—Bees and equipment. Keith Magers, Augusta, Kans.

WANTED—45 gallon honey tank with strainer. Franks, 7 East 151 Street, Harvey, Illinois.

WANTED—To buy 100 colonies bees in standard hives in Michigan. Leonard S. Griggs, 711 Avon St., Flint, Mich.

WANTED—150 colonies bees in standard 10-frame hives with extracting supers. G. M. Ranum & Son, Mt. Horeb, Wis.

WANTED—Bound volumes of Gleanings, 1872-1875; 1877-1879; 1881-1883; 1885; 1888; 1900-1902. Box 27, Gleanings, Medina, Ohio.

SEEDS

KOREAN Lespedeza, high quality, $1.75 bu. Hardy Alfalfa, $8.90. Grimm, $9.90. Timothy, $2.00. Sweet Clover, scarified, $2.70. Clover, $7.80. Triple cleaned. Guaranteed satisfactory. Certified Hybrid Corn, $2.00. Write for free samples. Catalog. Frank Sinn, Box 482, Clarinda, Iowa.

CAUCASIANS

Extra gentle, prolific, long-tongued, dependable workers.—10% to 40% ahead of Italians. Get honey when others get nothing.

CARNIOLANS

Prolific at all times, very gentle, build up rapidly, make beautifully white combs, most excellent workers. Colony records of 435 lbs. extracted each. Have supplied many state colleges and experiment farms in U. S. and Canada. My stock used in recent Iowa Exp. Sta. test. Better for northern and western states. Both quite disease resistant.

2-lb. package with queen $2.50
3-lb. package with queen 3.25
10-fr. colony tested (1940) queen 10.00

Package and colonies May 1st on. More convenient for eastern states and southern Canada. Less express charges, less net cost, less time in transit, arrive better condition. Queens introduced and free among bees if desired. Discounts on early orders. Ask for free paper.

Albert G. Hann, Glen Gardner, N. J.

HELLO, FOLKS

HERE WE ARE AGAIN!

Stevenson's Line-bred Goldens

We GOLDENS are non-swarming, the best of honey producers, and very gentle. This last characteristic has a double advantage. We do not BALL our queens; result, practically no supersedure, and we take the STING out of beekeeping. We are REALLY GOOD.

2-lb. pkgs. with queens—
1 to 3, $2.45; to 24, $2.20; to 99, $2.00; 100 up, $1.85. Extra bees, 70c per pound. Queens, 75c; tested, $1.50. Dealers and Associations lower bracket or 15% discount on unit price.

Write for descriptive circular.

STEVENSON'S APIARIES
Westwego, La.

Special 1941 Price

Italian Package Bees with Queen: 2-lbs., $1.50; 3-lbs., $1.90; for Comb package add 50c to above price. 10% down books order. Health certificate, full weight, safe delivery guaranteed. Address

Hessmer Bee Farm, Hessmer, La.

Sunny-Land Package Bees---Pure Italians

Ready early in April.
Prompt shipment from South.
2-lb. pkg. with young queen, $2.00; 3-lb. pkg. with queen, $2.60; 10 pkg. orders, 5% off; 25 pkg. orders, 10% off. Safe delivery guaranteed. No disease.

S. T. ROACH
2960 Queen St., Dearborn, Mich. Tel. 1928-W

Quality Three-banded Italian
Bees and Queens

2-lb. pkg. with queen, ...$1.90
3-lb. pkg. with queen, ... 2.45
Queens ..... .60

Special discount on all orders for bees to be shipped before April 10th.
Dependable Service.
Book your order early.

W. O. Gibbs
Willacoochee, Ga.

Package Bees, Queens, Bee Supplies

2-lb. pkg. with queen, $2.15; 3-lb., $2.75; queen, 70c; 2-lb., no queen, $1.45; For 10 or over, 5c each less. All prices in CANADIAN money, include the 11% exchange. Raised in the South, from our Canadian stock. Our own Canadian tested queens, $1.00; 3-fr. nuclei, Canadian bees and queen, $5.00; full colonies, in new hives, $12.00. Very reasonable prices on all kinds of bee supplies. White pine supers, 60c; Hoffman frs., 5c; etc. Please write for further information and prices on quantities.

Lorne Shelly, Troy, Ontario, Canada

MAGAZINES

MICHIGAN BEEKEEPER. The State Bee Magazine with a National Circulation. 50c a year. MICHIGAN BEEKEEPER, Rt. 3, Lansing, Michigan.

THE INDIAN BEE JOURNAL—The only bee journal in India. Sample copy free. Yearly 7c6d. Apply Editor, Indian Bee Journal. Jeolikote, Dist. Nainital, U. P. India.

READ the South African Bee Journal to be conversant with conditions from far afield. Subscription 5/ per year. For further particulars, write to the Hon. Treasurer, P. O. Box 43, Cleveland, Johannesburg, S. Africa.

AMERICAN POULTRY JOURNAL, 567 South Clark, Chicago, features colored pictures of poultry and common poultry diseases supplementing valuable information enabling you to increase profit. Six months 10c, two years 25c.

MANY beekeepers have proven raising fox, mink, nutria, muskrats, rabbits, highly profitable. Send dime for sample copy Canada's oldest fur farming magazine telling how. Fur Trade Journal of Canada, Box 31, Toronto, 2, Ontario.

THE BEE WORLD—The leading journal in Great Britain and the only international bee review in existence. Specializes in the world's news in both science and practice of apiculture. Specimen copy post free, 12 cents stamps. Membership in the Club, including subscription to the paper, 10/6. The Apis Club, L. Illingworth, The Way's End, Foxton, Royston, Herts, England.

1941 Package Bees and Queens 1941

YES WE HAVE THEM — **Three-Banded Italians** — THE BEST KIND YOU CAN BUY

—AGAIN WE OFFER YOU—

Superior Quality — Large Supply — Quick Service—Full Weight—Light Shipping Cages — Young Baby Bees —Choice Queens.

You will make no mistake in placing your order with us. We are not the biggest shippers of package bees and queens, but we rank with the best in quality and service. Safe arrival, satisfaction guaranteed, health certificate furnished. In U. S. A. and Canada.

—Prices—

	1 to 24	25 to 49
2-lb. pkg. with queen ..	$1.90 ea.	$1.80 ea.
3-lb. pkg. with queen ..	2.50 ea.	2.40 ea.
Untested queens	.55 ea.	.50 ea.

Write for prices on 50 or more packages.

Norman Bros. Apiaries
Ramer, Alabama

Package Bees and Queens

Three-banded Leather-colored Italians

One Customer writes:

"I am pleased to say that your bees are far superior to the others received this spring. Your bees are darker but are gentle and easy to handle. It seems to me they are more hardy in our cold climate and build up earlier with far less supersedure."

You, too, can get good results from our packages.

Two pound packages with queens, ...each $2.00
Three pound packages with queens, ...each 2.50
Select untested queens .....each .70

Write for prices on lots of 10 to 1000 packages.

The Crowville Apiaries, Winnsboro, Louisiana
J. J. Scott, Prop., Rt. 1.

A Hint to the Wise

Do you want your package bees to reach you on time and containing full weight of young bees—headed with as good queen as is possible for a breeder of 19 years' experience and a love for the business, to raise?

Then place your order with a shipper who thinks that you know what you need, and when you want it—a shipper who needs new customers, but values one repeat order above two new ones. Where 24 hours is considered a long delay, 3 days a tragedy, and one week has never happened to a package order, if booked in advance.

2-lb. pkg. with queen $1.90
3-lb. pkg. with queen 2.40
Queens 60 cents each.

2% per day will be refunded on all orders after 48 hours from date booked. If this suits you and you like Italian bees, would appreciate hearing from you.

A. E. SHAW, Shannon, Miss.

PURE ITALIAN BEES

If you are in the market for package bees in 1941, and want the best for your money, then you owe it to yourself to try my pure Italian Bees.

2 lbs. bees and young laying queen..$1.98
Extra Queen ..... .60
10% discount to dealers.

J. P. CORONA
P. O. Box 124, Kenner, La.

Help us to help you by placing your order at once for

PACKAGE BEES

headed with our

"Quality Plus" Queens

of Imported strain.

They are gentle, thrifty, longer lived and more conservative than the average bees.

2 lb. with young queen .....$2.00 each
3 lb. with young queen ..... 2.50 each

We can supply nuclei if allowed to be shipped into your state. Ask your inspector about this before ordering.

5% discount on orders of fifty packages or more, ordered before March 15th.

"They Produce"

If you have not received our circular give us your name and correct address. Of those on our list many have been returned for better address. Get yours for the cost of a card.

Rossman & Long

Box 133, Moultrie, Ga.

Beekeepers' Best Friend

Mrs. Harriett M. Grace, Director of Institute Office, at Madison, Wisc.

American Honey Institute

(See page 177, this issue, for Institute News, also page 159 for editorial on Institute activities.)

Help yourself by helping the Institute. Send remittance to American Honey Institute, Madison, Wisc.

WHY! We are prepared to give you better service---

Quality Quantity Experience

We believe experience to be a good teacher. With 20 years' experience in queen-rearing and package shipping, with 6000 nuclei and 3000 colonies to draw from, we are prepared to give you quality bred queens and bees.

Can furnish—
Light or leather-colored Italian bees and queens.

We furnish health certificate with all shipments, prompt delivery, full weight packages and young queens. We guarantee safe arrival and satisfaction.

——PRICES——

2-lb. pkg. with queen	3-lb. pkg. with queen	Queens
1- 50 .... $1.75	1- 50 .... $2.25	1- 50 .... $ .60
50-100 .... 1.70	50-100 .... 2.20	50-100 .... .55

(Write for prices on larger orders)
F. O. B. Payable in U. S. funds.

The Ideal Apiaries, Estill, South Carolina

Italian Package Bees and Queens

Try Our Introduced-queen Package

We guarantee these queens introduced 100%. Our 31 years' experience with bees insures you highest quality.

With Queen	1-49	50 or more
2-poung packages	$1.65	$1.60
3-pound packages	2.15	2.10
4-pound packages	2.65	2.60
5-pound packages	3.15	3.10
Untested Queens	.55	.50
Tested Queens	1.10	1.00

Packages with the queen caged same price. For comb packages add 40c to above prices for each comb. For queenless packages deduct prices of queens in quantity from packages quoted above.

D. C. Jackson Apiaries, Funston, Georgia, U.S.A.

Pettit's Package Bees with Queens

You Must Be Satisfied — Best Young Queens
Gentle Workers — No Drones

Quantity	Twos Each	Threes Each	Fours Each	Fives Each	Extra Queens Each
1-11	$2.45	$3.15	$3.85	$4.55	$ .75
12-23	2.30	2.95	3.60	4.25	.70
24-49	2.15	2.75	3.35	3.95	.65
50-up	2.00	2.55	3.10	3.65	.60

Our best friends are satisfied customers.
Cash before shipping.

Safe arrival and satisfaction guaranteed.
Never before were we so well prepared to give service.

Morley Pettit, Tifton, Georgia, U. S. A.

Southern Mississippi Italian Bees & Queens

Package bees and queens reared on natural honey flow. Real 3-Banded Italians—Good honey-gatherers. Our service for 1940 was 100%—All orders shipped on time—No delay. Satisfaction guaranteed—Fast service—Light weight cages—Overweight packages—Young baby bees.

	1-10	11-50	51-100
2 Pound package with queen,	$2.00	$1.90	$1.75
3 Pound package with queen,	2.60	2.40	2.25

Select Untested Italian Queens—1-10, 60c; 11-100, 50c.

For queenless package, deduct price of queen. For each additional pound of bees add 60 cents. Regularly inspected. No disease.

LUCEDALE APIARIES, LUCEDALE, MISSISSIPPI

BETTER-BRED QUEENS

Three-banded Italians

What will your money buy? Will it buy a good package and queen with poor service? Or, will it buy a good service with a poor package and queen? A queen of the highest quality. A full weight package of young bees. A healthy package of bees and queens. And delivered when you want them, is what you should get.

2-lb. package of bees with queen, 1 to 25	$2.00 each
3-lb. package of bees with queen, 1 to 25	2.50 each
4-lb. package of bees with queen, 1 to 25	3.00 each
5-lb. package of bees with queen, 1 to 25	3.50 each
Queens	.65 each

25 or more packages, 25c less per package. Our bees have been tested and approved by buyers throughout the United States and Canada.

CALVERT APIARIES, CALVERT, ALABAMA

Improved Select Italian Package Bees - Queens

A pleasure to work, and outstanding Honey-Getters. Selected for Maximum Crops, Hardiness, Gentleness, Non-Swarming, and Size.

PROMPT SHIPMENT and SAFE ARRIVAL Guaranteed.
Write For 1941 Prices.

R. B. HERIER CO.
Valdosta, Ga. U. S. A.

NORMAN'S Package Bees and Queens

YES, WE are back again offering you Pure 3-Band Italians of Highest Quality. Ready to book your order NOW for April 1st delivery or later. Book them with us and be sure of getting Prompt Service, Full Weight Packages, Young Laying Queens. Safe arrival and satisfaction.

Unt. Queens	$0.50
2-lb. pkg. with Queen,	1.75
3-lb. pkg. with Queen,	2.35

State Health Certificate Furnished.

JOHN A. NORMAN
Rt. 2. **Ramer, Ala.**

BRIEFLY STATED,

Caucasian Bees

are

Easy to handle
Go far afield for nectar
Fly when others quit
Build up rapidly in spring
Winter with the least protection
Keep themselves well fed
Yet equal others in crop
Become diseased less readily

Book your order with us and get the genuine MOUNTAIN GRAY STRAIN. Write for circular.

—PRICES—

Select untested Caucasian queens ..... $ .75 each
Select breeding queens 5.00 each

Package Bees With Select Untested Queens

Size of Package	2 Pound	3 Pound
1 package to 4	$2.45 each	$3.15 each
5 to 9 packages	2.35 each	3.05 each
10 to 24 packages	2.25 each	2.90 each
25 or more pkgs.	2.00 each	2.65 each

We have the bees and equipment to get your orders out on time and solicit your business on a basis of quality, be it a single queen or a truck load of package bees.

Caucasian Apiaries
Brooklyn, Alabama

When You Can Buy the Best at Money-saving Prices, WHY NOT?

Bee thrifty and buy your three-banded Italian Queens and Package Bees from the Company who will satisfy you. We guarantee, full weight, quick service, free from disease.

—Prices—

2-lb. Pkg. with queen $1.70
3-lb. Pkg. with queen 2.30
4-lb. Pkg. with queen 2.90
Queens, each ..... .50

HOMAN BROS.
Shannon, Miss.

SUSCEPTIBILITY OF HONEYBEE LARVAE TO AFB

(Continued from page 151)

result of the short time in larval life when inoculation must occur to produce infection, and to the type of feeding at that time.

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Laramie, Wyoming.

Four-Comb Nuclei

(Offer 1100)

Two strong nuclei in each new painted, ten-frame hive body, each nuclei with four combs bees and hatching brood, honey, and 1941 laying queen, $3.15 each nuclei. Caucasians or Italians. Our hive bodies have a removable partition through the center, screen wire top and bottom. Queens are loose and laying, introduced 100 per cent on arrival. We ship rush orders. No disease. Safe arrival guaranteed.

WM. PIEFER & SONS
Gause, Texas

Package Bees and Queens

Three-Banded

Let us quote you on your needs.

Dupuis Apiaries
Breaux Bridge, La.

York's Package Bees and Queens

Quality Bred Italians

Preparedness is the order of the day and we are better prepared than ever to give service on any quantity. Anything less than highest quality bees, full weight packages, and the best of shipping are high at any price.

Prices in U. S. funds or equivalent

Young laying queens, 1 to 24, 75c each; 25 to 99, 65c each; and 100 or more at 60c each.

2-lb. pkg. bees with queens, 1 to 24, ... $2.00 each
25 to 99, $1.90 each, and 100 or more at ..... 1.75 each
3-lb. pkg. bees with queens, 1 to 24, ... 2.50 each
25 to 99, $2.40 each, and 100 or more at ..... 2.25 each

There is no time to lose, place your order now for shipping date wanted. Full weights, freedom from disease, safe arrival, and satisfaction guaranteed.

York Bee Company, Jesup, Georgia, U. S. A.

(The Universal Apiaries)

BERNELL'S PACKAGE BEES and QUEENS

2-lb. $2.00
3-lb. 2.50
Queens ..... .60
Discount to Dealers

THREE-BANDED ITALIANS.

R. L. BERNELL
Rt. 4, Box 270,
NEW ORLEANS, LA.

2 Lines Garon's Progeny-Test Three-Banded Italians Garon's A.F.B. "Resistant" Stock

Our regular strain has been improved. Another year of careful selection behind this stock.

We place considerable emphasis on the facilities we have to perpetuate the "RESISTANT" characters in our AFB stock. Complete coordination of northern and southern facilities means better stock in the future. Our position is outstanding in this regard.

——PRICES——

2-lb. pkg. with queen		Queens	3-lb. pkg. with queen
1-25	$2.10	$0.70	$2.75
26-99	1.90	.65	2.55
100 or more	1.85	.60	2.50

ADD 10c PER QUEEN OR PACKAGE FOR RESISTANT STOCK

GARON BEE COMPANY **Donaldsonville, Louisiana**

KNIGHT'S

Package Bees and Queens

Leather-Colored Italians
The Best Honey-Gatherers

Prices including queens

	2-lb. pkg.	3-lb. pkg.	4-lb. pkg.	5-lb. pkg.
1 to 9	$2.10	$2.70	$3.30	$3.90
10 to 24	2.00	2.60	3.20	3.80
25 to 99	1.95	2.55	3.15	3.75
100 up	1.80	2.35	2.95	3.55

Queenless packages, deduct 65c.

Select young laying queens, 75c each; 10 or more, 65c each. All queens guaranteed mated pure. Safe arrival and satisfaction guaranteed.

JASPER KNIGHT
HAYNEVILLE, ALA.

THRIFTY BEES

Combless Packages and Queens.

Pure Three-banded Italians only

Forty-nine years' experience assures you of the best service and finest stock.

We guarantee full-weight packages of young, thrifty, three-banded Italian bees and safe delivery.

Thrifty bees will build powerful colonies in time for your honey flow. They are guaranteed to please.

Early booking insures you of the best delivery. Let us quote you our attractive prices.

W. J. Forehand & Sons
Fort Deposit, Ala.

Breeeders Since 1892.

FOR SALE!

Italian Bees and Queens. Nothing but the best Bright Yellow and Three-band.

Queens 50c each

1-lb. Bees with young queen	$1.25
2-lbs. Bees with young queen	1.75
3-lbs. Bees with young queen	2.25

Discount on 10 or more packages.
You send for them, they go.

Graydon Bros.
Route 2, Greenville, Ala.

Package Bees

THAT LIVE AND PAY

Shipped promptly on dates specified.
Three-band Italians.

2-lb. Pkg. with queen	$2.00
3-lb. pkg. with queen	2.60
4-lb. Pkg. with queen	3.20
5-lb. Pkg. with queen	3.80
Queens	.60

15% discount to dealers.

CITRONELLE BEE COMPANY
CITRONELLE, ALA.

Queens and Packages Caucasians Italians

For years we have been filling orders on time. If you have foulbrood in your apiary try some of our queens of Government resistant stock. One customer wrote he was going to requeen all of his 3000 colonies this year with queens from resistant stock. We do not guarantee these queens to be 100% resistant to AFB.

Early March Queens $1.00 each. April Queens 60c each.
2-lb. pkg. bees with queen $2.25 each, 3-lb. and queen $2.95 each

Paying 30c pound for beeswax in exchange for bees and queens, ship wax direct to Dadant & Sons, Hamilton, Ill. and write us about it. We do lots of trading, what have you? Honey WANTED. Circular FREE. Truckers Head Quarters Rio Grand Valley, on Progresso Highway.

BLUE BONNET APIARIES, R. 1, Box 70, Mercedes, Tex.

DIXIELAND'S
Leather-Colored Italians

The best stock of Leather-Colored Italians—queens and package bees. Our strain of bees has been improved through years of testing, and selecting queens from a strain of Dark Leather-colored Italian queens that was originally imported from Italy. These years of testing and selecting have produced a gentle, hardy, and as good a honey producer as can be found on the market today.

2-lb. pkg. with selected queen $2.00
3-lb. pkg. with selected queen 2.50
4-lb. pkg. with selected queen 3.00
Selected untested queens, each ... .60

Write for prices on larger lots. Book your order now and reserve your shipping date. Once we fill your orders, you will always be satisfied with our prompt service, full weight, low supersedure, and safe arrival.

You must be satisfied.

DIXIELAND APIARIES
GREENVILLE, ALABAMA

Lower Prices
Higher Quality

You will note the prices below are considerably lower than we have quoted for some time, but this does not mean we have lowered the standard of our bees. In fact, we have more colonies, more queen nuclei, more experience than ever before, and packages all nailed and ready to fill. Some of our competitors, though, feel that they can supply you bees at lower prices, so we will do the same. You can buy bees from us and expect the same high quality as always. State health certificate, safe arrival, and satisfaction guaranteed.

Bright Italian Bees and Queens

APRIL, MAY DELIVERY
PACKAGES F. O. B. EXPRESS

2-lb. Pkgs. with young queen..$1.75 ea.
3-lb. Pkgs. with young queen.. 2.35 ea.
4-lb. Pkgs. with young queen.. 2.80 ea.
5-lb. Pkgs. with young queen.. 3.30 ea.
Untested queen ..... .50 ea.
Tested queen ..... 1.00 ea.

NORMAN BEE CO., LaPine, Ala.

3-BANDED ITALIAN QUEENS

FOULBROOD RESISTANT QUEENS

We raised AFB Disease Resistant QUEENS FOR the Government. Our QUEEN YARDS are ISOLATED like the Government requires for PURE breeding. We have Government AFB Disease Resistant QUEENS to breed from. Ready to ship April 1st.

1 to 12, 75c; 12 to 50, 65c; 50 to 100, 60c.

723 C Street **JOHN G. MILLER** **Corpus Christi, Texas**

GASPARD'S QUALITY

Golden and Three-banded Italian Queens and package bees for spring 1941 delivery. Over 20 years' experience which assure you of prompt and efficient service. Book your order now and reserve shipping date. 10% will book your order, balance at shipping time.

Prices as follows: (Combless Packages with Queens)

2-lb. package with queen .....$2.00 each
3-lb. package with queen ..... 2.50 each
4-lb. package with queen ..... 3.00 each

(Comb packages with queens)

2-lb. package with queen and one extra frame of brood .....$2.25 each
3-lb. package with queen and one extra frame of brood ..... 2.75 each
4-lb. package with queen and one extra frame of brood ..... 3.25 each

25 to 49 packages 10% discount, 50 or more 15% discount.

Address J. L. GASPARD, Hessmer, La.

-Proved-Proven-

to be

TIMESAVERS

by large scale operators when spacing frames in the rush of the honey flow. Many satisfied users write they are very much pleased with our FRAME SPACERS. Write for folder of information.

H. A. SCHAEFER, Osseo, Wis.
Agents wanted to demonstrate.

SPECIAL

100 3-lb. packages with queen
$2.25
for shipment May 1st, 1941
Fine young Italian queens 60c, any number

L. W. LANGE, Richmond, Texas

THREE-BANDED ITALIANS
PACKAGE BEES AND QUEENS

Our Bees are as good as any.
Our Queens are purely Mated.

Buy your Bees and Queens from me, and I will not disappoint you.

W. A. FLETCHER, Garland, Texas

TOO LATE TO CLASSIFY

HARDY ITALIAN QUEENS. Kenneth Francisco, Logan, Ohio.

EAT OR SELL at roadside stands, pure maple syrup. Booking orders April delivery. Say amount. Jerome Stange, Loyal, Wis.

FOR SALE—All or part of 100 disease free colonies in 10-frame Jumbo hives, 150 shallow extracting supers with drawn combs, 1 No. 20 Lewis 2-frame extractor with 13-inch baskets. C. W. Schrader, Waterville, N. Y.

FOR SALE—25 colonies of bees, disease free. Also equipment. E. B. Armstrong, Slingerlands, N. Y.

MICHIGAN clover honey in sixties. Glenn Yeutter, Adrian, Mich. R. 4.

NOW YOU CAN get queens or packages as early as you wish. Now booking for March, April and May. Tropical Apiaries, Fort Myers, Fla., R. R. 1.

PURE RASPBERRY HONEY—10-lb. tin, $1.95, postpaid; 60-lb. tin, $4.20. Frank Keith, Boyd, Wisconsin.

WANTED—Young experienced bee man, with clean habits. Give age, weight, height, and references in first letter. C. H. Schader, Sunnyside, Wash.

150 to 550 colonies. Free of disease. Extra good equipment. Located southern California. Box 22, Gleanings, Medina, Ohio.

QUALITY ITALIAN BEES AND QUEENS

Place your order where you get Quality in the Queen.

2-lb. package with Queen $2.00
3-lb. package with Queen 2.45
Untested Queens each ..... .65

Backed by 8 years' experience.

B. A. ANDERSON, OPP, ALA.

Carniolans Lead the Way

Queens introduced and clipped free—on request. Bees 100% disease free.

SATISFACTION—SERVICE

PRICES: 2-lb. pkg. with Queen		Mated Queen	3-lb. pkg. with Queen	
1-24	$2.10	$0.65	1-24	$2.75
25-99	1.95	.60	25-99	2.55
100-up	1.85	.55	100-up	2.45

CARNIOLANS RESISTANT to EFB and SACBROOD.

EPHARDT'S HONEY FARMS, TORRAS, LOUISIANA

PACKAGE BEES AND QUEENS

Your choice of queens.

ITALIAN, CAUCASIAN, CARNIOLAN

A quarter of a century in the same business, in the same locality, with many of the same customers is our record.
One package to a truck load will receive our prompt attention.
My motto through the years: I will expect to do business with you again.

	1 to 5	6 or more
2-lb. package with young select laying queen, each	$2.00	$1.75
3-lb. package with young select laying queen, each	2.50	2.20

You can pay more but you cannot get better bees or fairer treatment.

H. E. GRAHAM CAMERON, TEXAS

Spoerri's Goldens

Used in every state of the Union

Telling you how good they are is no proof—Ask your neighbor or the man who owns them. SEE FOR YOURSELF! Match them against any bee as to gentleness, productiveness, their disinclination to swarm and the ability to stand extremes in temperatures. Satisfied customers in subartic Sweden and the torrid South Americas.

Queens, ...$0.75
2-lb. pkg. with queen, ... 2.20
3-lb. pkg. with queen, ... 2.85

SPOERRI APIARIES
St. Bernard P. O., Louisiana

Package Bees and Queens

Three-banded Italians

2-lb. package with queen $1.75
3-lb. package with queen 2.25
Queens ..... .50

Satisfaction guaranteed.

A trial order will convince you of our quality stock.

THE HASELMAIER APIARIES
Mt. Vernon, Ala.

$1.60 2-lb. Package Italian Bees and Queen $1.60

Postage not included
Bright Queen 50c each Postpaid

E. A. CASWELL
4019 Piety St., Rt. 4. New Orleans, La.

SPECIAL

Booking orders for a limited quantity of two-pound packages, with queen at $1.40 each. This offer will close March 15th. 10% deposit, balance at shipping date.

THE CLOVER BEE FARM
Hessmer, La.

PACKAGE BEES AND QUEENS

Bright Three-banded Italians

Loose queen packages: 1 to 24, 2-lb., $2.40 each; 25 to 50, $2.30 each; 3-lb., 1 to 24, $2.70; 25 to 50, $2.60. Packages with caged queens: 1 to 24, 2-lb., $2.10; 25 to 50, $2.00; 3-lb., 1 to 24, $2.50; 25 to 50, $2.40. Queens, 75c each; 25 or more, 65c each. We guarantee prompt delivery, safe arrival, satisfaction.

TAYLOR APIARIES, Luverne, Ala.

PACKAGE BEES

Hustling Italians, Full Weight Baby Bees. Safe Delivery Guaranteed.

2-lb. with queen, $2.00; 25 pkgs., $1.80 each
3-lb. with queen, 2.60; 25 pkgs., 2.40 each
Larger packages and larger orders quoted on request. ALSO COMB PACKAGES.

CRENSHAW COUNTY APIARIES
Rutledge, Ala.

Solicit Subscriptions

Among Your Beekeeping Friends

A number of persons have written us for our offer to reliable persons. However, we still have a few localities where the right person can secure a number of subscriptions. Write for sample copies. Give references.

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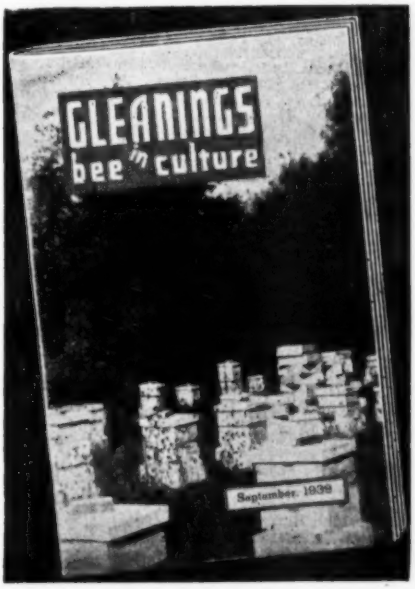
Medina, Ohio



What do you want

in

Package Bees

and

Queens?

Prompt Service?
High Quality?
Low Price?

We offer you all, backed by a guarantee that you must be satisfied.

Write for particulars, price list and illustrated literature.
It's free.

THE PUETT CO.
HAHIRA, GA.

Reliable Service
Reliable Package Bees and Queens
Three-band Italian Bees and Queens

Price list, Via Express Collect. All prices subject to change with ten days notice.

	2-lb. pkgs.	3-lb. pkgs.	4-lb. pkgs.	5-lb. pkgs.	Queen
1 to 24	$2.10	$2.75	$3.40	$4.00	$.65
25 to 99	$1.95	$2.55	$3.15	$3.75	$.60
100 or more	$1.80	$2.35	$3.10	$3.45	$.55

Prices via mail on package bees quoted on request. Pure mating, safe arrival, prompt shipment and quality bees and queens guaranteed.

W. E. HARRELL
Hayneville, Alabama

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